



FRIDAY, JANUARY 20.

Train Accidents in December.

The following accidents are included in our record for the month of December:

REAR COLLISIONS.

On the morning of the 1st a yard engine on the Nashville, Chattanooga & St. Louis road ran into the rear of another yard engine in Nashville, Tenn., damaging the tender.

On the morning of the 2d a passenger train on the Oregon Railway & Navigation Company's road backed into another passenger train on a siding, at South Ainsworth, Oregon, throwing one car into the river. A passenger was hurt.

On the night of the 2d a freight train on the New York, Lake Erie & Western road broke in two near Hinsdale, N. Y., and the rear section ran into the forward one, piling up 15 cars in a bad wreck.

On the evening of the 3d a freight train on the Dayton & Southeastern road ran into the rear of a preceding freight, which had stopped at Austin, O., and had sent back no signal. An engine and several cars were wrecked, the engineer and fireman killed.

On the morning of the 5th a freight train on the Chicago, Milwaukee & St. Paul road ran into some cars which had broken loose from a preceding freight near Elk River, Ia. Several cars were wrecked.

Very early on the morning of the 7th a freight train on the Michigan Central road ran into a preceding freight near Colon, Mich., wrecking four cars and killing a drover in the caboose.

On the morning of the 7th a passenger train on the Pittsburgh, Ft. Wayne & Chicago road ran into the rear of a coal train which was going into a siding at Leetsdale, Pa. The engine and several cars were damaged.

On the morning of the 8th a freight train on the Chicago & Alton road ran into a preceding freight near Rock Creek, Mo., making a bad wreck and injuring two brakemen.

On the 7th a passenger train on the Atlanta & Charlotte Air Line ran into the rear of a freight near Seneca, S. C., wrecking the caboose and killing two trainmen.

Very early on the morning of the 10th a passenger train on the Pennsylvania Railroad ran into the rear of a coal train in Philadelphia. The engine and a passenger car were damaged and several coal cars wrecked.

On the morning of the 11th a coal train on the Baltimore & Ohio road ran into a preceding coal train near Bristol, O., damaging the engine and several cars and killing the engineer.

On the morning of the 11th a freight train on the Cincinnati Southern road ran into the rear of a preceding freight, near Kismet, Tenn., wrecking the engine and several cars, killing the engineer, fireman and a brakeman.

On the night of the 12th a freight train on the Philadelphia & Reading road ran into the rear of a coal train near Ringgold, Pa., wrecking several cars.

On the morning of the 14th a freight train on the Chesapeake & Ohio road ran into another freight at Eastern Kentucky Junction, Ky., wrecking several cars, killing one brakeman and injuring another.

On the morning of the 17th a passenger train on the Manhattan Elevated road ran into the rear of a preceding train which had stopped at the Ninety-eighth street station in New York. A car was badly damaged.

On the morning of the 17th a freight train on the Indianapolis & St. Louis road ran into the rear of a preceding freight in Terre Haute, Ind., doing some damage.

About noon on the 17th in Indianapolis, Ind., a Cincinnati, Indianapolis, St. Louis & Chicago yard engine ran into an Indianapolis & St. Louis engine, breaking it badly.

On the night of the 17th a freight train on the Pennsylvania Railroad ran into a preceding freight near Ardenheim, Pa. The engine and four cars were badly broken.

On the morning of the 18th a freight train switching in the New York, Lake Erie & Western yard in Jamestown, N. Y., ran into the rear of a passenger train, doing some damage.

On the evening of the 18th a passenger train on the Chicago & Northwestern road ran into the rear of a freight in Chicago, Ill., damaging two cars.

On the morning of the 20th a freight train on the Lake Shore & Michigan Southern road ran over a misplaced switch and into another freight on a siding in Elkhart, Ind., wrecking several cars.

On the evening of the 17th the milk train on the Housatonic road ran into the rear of a passenger train which was backing into a siding at Newtown, Conn. An engine was damaged.

On the night of the 20th a freight train on the Wabash, St. Louis & Pacific road ran into the rear of repair train near Liberty Mills, Ind. The engine and several cars were damaged and five men were hurt.

On the evening of the 21st a freight train on the Lake Shore & Michigan Southern road ran into some cars which had broken loose from a preceding freight near Chase's, Mich., damaging the engine and several cars.

On the night of the 22d a freight train on the Pennsylvania road ran into the rear of a preceding freight near Wilmore, Pa., wrecking several cars and injuring three trainmen.

On the night of the 22d a freight train on the New York, Lake Erie & Western road ran into the rear of a preceding freight near Ramapo, N. Y., damaging several cars and derailling several others. One track had been cleared, when a spark from the engine of a passing passenger train set fire to the oil from a wrecked tank car, and seven or eight oil cars were burned up, the burning oil making a great fire and completely destroying the track for half a mile.

On the afternoon of the 23d a passenger train on the Pennsylvania Railroad ran into the rear of a freight train at Holmesburg, Pa., wrecking two cars.

On the morning of the 24th a passenger train on the New York, Lake Erie & Western road ran into the rear of a freight train at Passaic, N. J., wrecking the caboose and damaging an engine.

On the morning of the 24th a freight train on the Chicago, Milwaukee & St. Paul road ran into some cars which had broken loose from a preceding freight near Spring Valley, Minn. Several cars were broken up and the conductor hurt.

On the 24th a construction train on the Northern Pacific road ran into the rear of another construction train near Spokane Falls, Wash. Ter., wrecking an engine and several cars, killing a conductor and injuring a fireman.

On the night of the 26th a freight train on the Housatonic road ran into some freight cars which had been run out of a siding upon the main track near Newtown, Conn. The engine was damaged, the cars wrecked.

On the morning of the 27th a freight train on the Syracuse,

Binghamton & New York road ran into a preceding freight near Chenango Forks, N. Y., wrecking several cars.

On the morning of the 29th a freight train on the Pittsburgh, Cincinnati & St. Louis road broke in two near Paris Road, Pa., and the rear section ran into the forward one, wrecking several cars and injuring the conductor.

On the evening of the 29th several cars of a freight train on the Troy & Greenfield road broke loose from the train in North Adams, N. Y., and ran back down grade into another freight train, which was switching in the yard. Several cars were wrecked and a brakeman hurt. It is said that the trainmen purposely uncoupled the cars, thinking the brakes would hold them.

On the morning of the 30th a freight train on the New York Central & Hudson River road ran into the rear of a preceding freight near Lyons, N. Y., wrecking several cars. The engineer and fireman were hurt.

On the afternoon of the 30th a freight train on the New York Central & Hudson River road ran over a misplaced switch and into some freight cars on a siding in the yard at East Buffalo, N. Y. The engine was damaged.

On the afternoon of the 30th a freight train on the Baltimore & Ohio road ran into the rear of another freight at Benwood, W. Va., wrecking three cars.

Near midnight on the 30th a west-bound freight train on the Pennsylvania Railroad ran into the rear of a preceding freight, which had just started up after stopping to repair a broken coupling, near Christiansburg, Pa. The rear engine and several cars were wrecked, and thrown over both tracks.

A minute later an east-bound freight came up and ran into the wrecked cars. The engine was upset and the wreck caught fire, burning up two engines and 13 cars. A brakeman was killed, an engineer and a fireman fatally hurt.

BUTTING COLLISIONS.

On the morning of the 2d there was a butting collision between a freight train and a wild engine on the Louisville & Nashville road near Columbia, Tenn., by which both engines were damaged.

On the afternoon of the 3d there was a butting collision between a special freight and a local passenger train on the New York & New England road near Thompson Conn. Both engines were wrecked, several cars damaged, an engineer and conductor killed, six trainmen and seven passengers hurt, most of them slightly. The freight train had orders to look out for the passenger.

Very early on the morning of the 7th there was a butting collision between two freight trains on the Texas & Pacific road near Hallville, Tex., by which both engines and 18 cars were piled up in a very bad wreck; five trainmen were killed and four hurt. It is said that one of the trains had orders to wait at Hallville, but did not stop there.

On the night of the 12th there was a butting collision between a Chicago, Rock Island & Pacific and a Hannibal & St. Joseph freight near Kearney, Mo. Both engines were wrecked, one trainman fatally injured, and five others less severely hurt.

On the night of the 15th there was a butting collision between two freight trains on the Western & Atlantic road, near Dalton, Ga. Both engines and ten cars were wrecked, and the track blocked nearly an entire day. The accident was caused by failure to signal an extra, or notify the opposing train that one was coming.

On the morning of the 19th there was a butting collision between two repair trains on the Nashville, Chattanooga & St. Louis road, near Hollow Rock, Tenn., by which both engines were damaged.

On the morning of the 22d there was a butting collision between two freight trains on the Chicago, Milwaukee & St. Paul road near Waukegan, Ill., by which both engines and several cars were wrecked.

On the 22d there was a butting collision between two yard engines on the St. Paul, Minneapolis & Manitoba road in St. Paul, Minn. Both engines were damaged.

On the 23d there was a butting collision between two freight trains on the Montgomery & Eufaula road near Montgomery, Ala., by which both engines and several cars were damaged.

On the 23d there was a butting collision between two passenger trains on the Hannibal & St. Joseph road near Brookville, Mo., by which both engines and several cars were wrecked and a brakeman hurt.

On the morning of the 26th there was a butting collision between two freight trains near Montezuma, Ga., on the Southwestern Railroad, of Georgia.

On the afternoon of the 28th there was a butting collision between a passenger train and a wild engine on the Baltimore & Ohio road near Belton, W. Va., by which both engines were damaged and two trainmen hurt. It is said that the engineer of the wild engine misunderstood his orders.

CROSSING COLLISIONS.

On the afternoon of the 19th a Freehold & New York passenger train ran into a New Jersey Central passenger train at the crossing in Mattawan, N. J. A Central car was wrecked, the fireman killed, the switchman and three passengers hurt. Each engineer claimed that the signal was set for his train to go over the crossing.

On the evening of the 23d a passenger train on the Pennsylvania Railroad ran into a New Jersey Central passenger train at the crossing in Elizabeth, N. J. The Central passenger car was thrown from the track, blocking both roads four hours. The proper signals were displayed, but the track was wet and slippery, and the Pennsylvania train could not be stopped in time.

On the 30th an Illinois Central freight train ran into a Chicago & Eastern Illinois freight at the crossing near Chicago, Ill., wrecking several cars.

DERAILMENTS, BROKEN RAIL.

On the morning of the 2d a passenger train on the Richmond & Danville road struck a broken rail near Thomasville, N. C., and two cars were thrown from the track and upset, injuring 12 passengers slightly.

Very early on the morning of the 10th a passenger train on the Chicago & Alton road struck a broken rail near Lexington, Ill., and two cars were thrown from the track.

On the morning of the 19th a passenger train on the Pennsylvania Railroad was thrown from the track near New Holland, Pa., by a broken rail. Three persons were hurt.

On the 21st a passenger train on the Peoria, Decatur & Evansville road struck a broken rail near Lincoln, Ill., and three cars were thrown from the track and upset, injuring four passengers.

On the night of the 26th a passenger train on the New York, Lake Erie & Western road struck a broken rail near Warsaw, N. Y., and the engine was thrown from the track and upset.

On the night of the 28th a freight train on the Utah & Northern road struck a broken rail near Collington, Utah, and seven cars were thrown from the track.

DERAILMENTS, DEFECTIVE RAIL-JOINT.

On the night of the 6th a train on the St. Louis & San Francisco road ran off the track near Logan, Mo., and several cars were wrecked, killing three tramps, who were stealing a ride. The accident is said to have been caused by a bad joint.

On the morning of the 31st seven cars of a freight train on the Chicago & Grand Trunk road were thrown from the

track near Durand, Mich., by a defective rail-joint, blocking the road several hours.

On the morning of the 31st a freight train on the Chicago & Grand Trunk road was thrown from the track near Battle Creek, Mich., by a defective rail-joint, blocking the road 11 hours.

DERAILMENTS, BROKEN SWITCH-ROD.

On the morning of the 20th some cars of a freight train on the Richmond & Danville road were thrown from the track in Richmond, Va., by a broken switch-rod. The engineer jumped, but the shock broke the coupling, and also broke the throttle valve of the engine so that it could not be closed by the fireman, who remained on the engine, and it ran through the city and out several miles, running over two wagons in its course.

DERAILMENTS, BROKEN BRIDGE.

On the afternoon of the 6th a yard engine on the Wabash, St. Louis & Pacific road broke through a small trestle in Indianapolis, Ind., and was wrecked.

On the evening of the 8th a span of the bridge over the Missouri River at St. Charles, Mo., on the Wabash, St. Louis & Pacific road, gave way under a freight train and the engine and 31 cars went down 65 ft. into the river. Three men went down with the train; the engineer was killed, the fireman and a brakeman were hurt, but were rescued. The bridge was of iron, and was thought to be perfectly safe, though another span failed some time ago. It is thought that the engine jumped the track and went through the floor, pulling down the bridge.

On the afternoon of the 10th a freight train on the Indianapolis, Decatur & Springfield road broke through a temporary trestle built to replace a washed-out bridge near Indianapolis, Ind. Several cars were wrecked and four men in the way-car were hurt.

DERAILMENTS, SPREADING OF RAILS.

On the afternoon of the 4th a passenger train on the Selma & New Orleans road ran off the track near Selma, Ala. Two trainmen were killed and one badly hurt. The accident was caused by the spreading of the rails.

On the morning of the 14th a freight train on the Atlanta & Charlotte Air Line was thrown from the track near Atlanta, Ga., by the spreading of the rails, blocking the road several hours.

On the evening of the 14th two oil-tank cars of a freight train on the New Jersey Central road ran off the track near Claremont, N. J., and were thrown across both tracks, blocking the road two hours. The accident is said to have been caused by the spreading of the rails.

On the afternoon of the 25th several cars of a freight train on the Missouri Pacific road were thrown from the track near Kansas City, Mo., by the spreading of the rails.

On the evening of the 30th a passenger train on the Cleveland, Akron & Columbus road was thrown from the track near Cuyahoga Falls, O., by the spreading of the rails.

On the night of the 31st six cars of a freight train on the Illinois Midland road were thrown from the track near Atlanta, Ill., by the spreading of the rails.

DERAILMENTS, BROKEN WHEEL.

About noon on the 18th several cars of a freight train on the New York Central & Hudson River road were thrown from the track in Holly, N. Y., by a broken wheel.

On the night of the 23d several cars of a freight train on the Buffalo, New York & Philadelphia road were thrown from the track at Yorkshire, N. Y., by a broken wheel, and piled up in a bad wreck. A brakeman was hurt.

DERAILMENT, BROKEN AXLE.

On the morning of the 1st six cars of a freight train on the Central Railroad, of New Jersey, were thrown from the track near Raritan, N. J., by a broken axle.

DERAILMENTS, ACCIDENTAL OBSTRUCTION.

On the night of the 3d a passenger train on the Western North Carolina road was thrown from the track near Hickory, N. C., by the pilot of the engine becoming loose and falling on the track. Two cars upset down a bank, injuring four passengers.

On the evening of the 11th a passenger car attached to the milk train on the New York, Susquehanna & Western road struck a gravel car which had been run partly out of a siding at Van Winkle, N. J. The milk cars passed by, but the passenger car caught the dump and was thrown from the track and upset, injuring two persons.

On the morning of the 24th a construction train on the Rochester, Nunda & Pittsburgh road was thrown from the track in Nunda, N. Y., by frozen earth which had fallen on the rails. Three cars were wrecked, a laborer killed and two others hurt.

About noon on the 24th a passenger train on the Boston & Albany road struck a hand-car loaded with rails near Cottage Farm, Mass. The engine and three cars were thrown from the track and the engine badly damaged.

DERAILMENTS, MISPLACED SWITCH.

On the morning of the 6th a passenger train on the Louisville, New Albany & Chicago road was thrown from the track in New Albany, Ind., by a misplaced switch.

On the afternoon of the 12th the engine of a freight train on the Philadelphia & Reading road was thrown from the track at Rupert, Pa., by a misplaced switch.

On the night of the 27th the engine and baggage car of a passenger train on the Philadelphia & Reading road were thrown from the track at Robeson, Pa., by a misplaced switch.

DERAILMENT, OPEN DRAW.

On the morning of the 21st the engine of the pay train on the Chicago & Northwestern road went through the open draw of the bridge over the North Branch of the Chicago River in Chicago, Ill. The engine went down into the river, but the draw, which was just closing, stopped the pay-car. The conductor was drowned, the engineer badly hurt. It is said that the usual signal was displayed, but was obscured by smoke.

MALICIOUS DERAILMENTS.

On the morning of the 14th a passenger train on the Mississippi & Tennessee road was thrown from the track near Oakland, Miss., by a rail which had been purposely misplaced and detached from its fastenings. Four cars were thrown from the track and two passengers hurt.

On the night of the 14th the engine of a passenger train on the Lake Shore & Michigan Southern road was thrown from the track near Delta, O., by ties piled up on the track. A man was afterward arrested on suspicion.

On the night of the 25th a freight train on the Mackinaw Extension of the Michigan Central was thrown from the track near Indian River, Mich., where some rails had been removed by a gang of laborers, whom a sub-contractor had failed to pay.

Very early on the morning of the 26th another freight train was thrown from the track at the same place in the same way.

On the evening of the 29th a construction train on the St. Louis, Jerseyville & Springfield road was thrown from the track by obstructions piled up near Newbern, Ill. A laborer was killed and four others hurt.

UNEXPLAINED DERAILMENTS.

On the afternoon of the 2d two cars of a freight train on

Fig. 1.
CINCINNATI SOUTHERN RY.

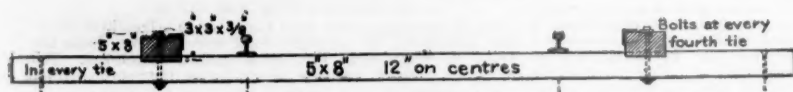


Fig. 2.
SABULA BRIDGE.
C. M. & ST. P. RY.

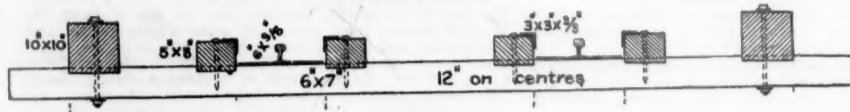


Fig. 7.
FITCHBURG R. R.
HALF SECTION AT ENDS OF BRIDGE

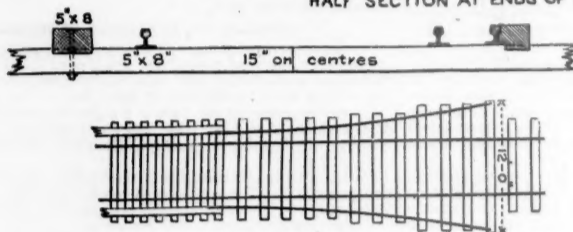


Fig. 5.
PROVIDENCE & WORCESTER R. R.

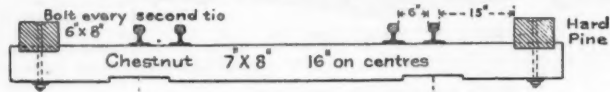
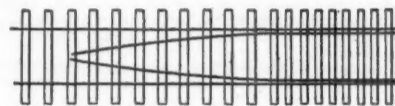
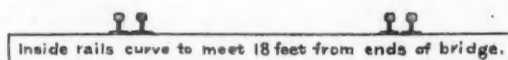


Fig. 6.
INSIDE T GUARD RAIL.



0 1 2 3 4
SCALE OF FEET.

Fig. 3.
BOSTON & ALBANY R. R.
DOUBLE TRACK DECK

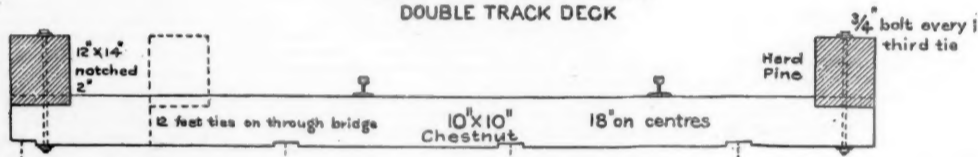
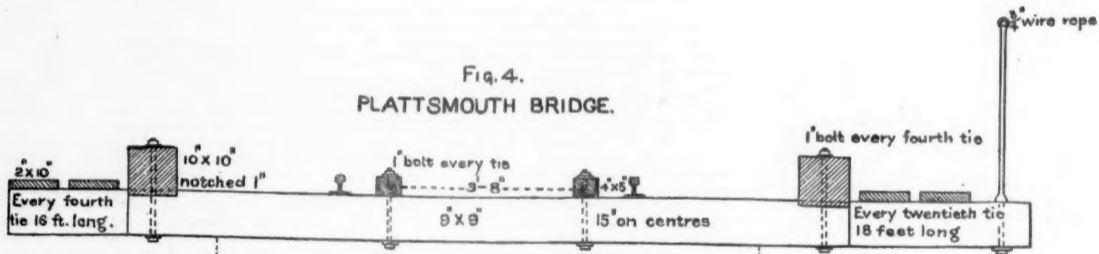
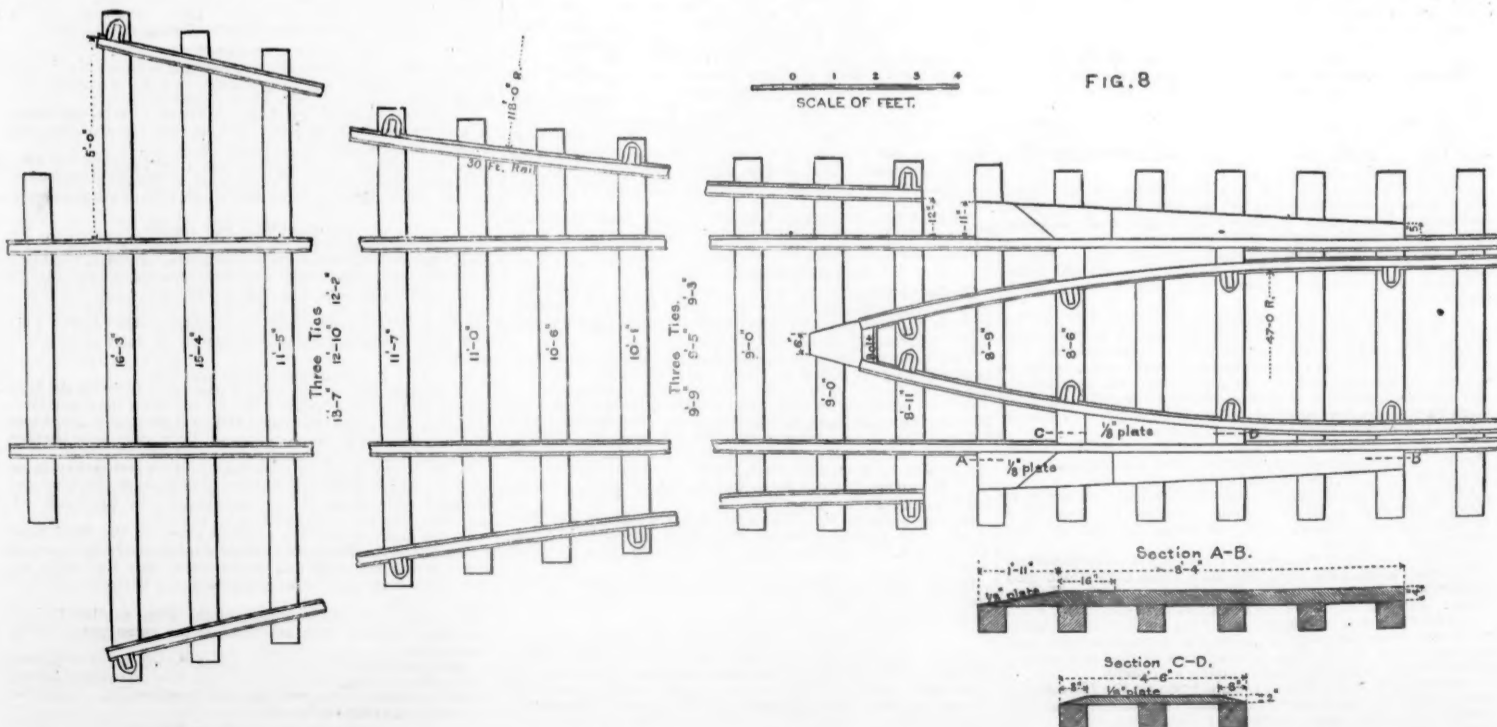


Fig. 4.
PLATTSMOUTH BRIDGE.



All timber of Fig. 4 is oak.



BRIDGE FLOORS AND GUARD RAILS.

the New York & New England road were thrown from the track in Willimantic, Conn. A brakeman was thrown down between the cars and killed.

On the morning of the 6th a freight train on the Louisville & Nashville road ran off the track near South Union, Ky. Two trainmen were hurt.

On the evening of the 7th a car of a freight train on the Chicago, Milwaukee & St. Paul road ran off the track in La Crosse, Wis., and upset.

On the morning of the 8th five cars of a freight train ran off the track near Mexico, Mo., on the Chicago & Alton road.

On the morning of the 8th the engine of a passenger train on the New York Central & Hudson River road ran off the track in East Buffalo, N. Y., doing some damage.

On the morning of the 10th several cars of a freight train on the Pennsylvania Railroad ran off the track at Norcross, Ga., and were wrecked.

On the night of the 10th several cars of a freight train on the New York Central & Hudson River road ran off the track in Utica, N. Y., and upset.

On the evening of the 13th two cars of a freight train on the Pennsylvania Railroad ran off the track at Bessemer, Pa., delaying trains some time.

On the night of the 14th a freight train on the Louisville, New Albany & Chicago road ran off the track near Greencastle, Ind. A man in the caboose was hurt.

On the afternoon of the 15th five cars of a freight train on the Atlanta & Charlotte Air Line ran off the track near Gainesville, Ga., and went down a high bank.

On the afternoon of the 16th a passenger train ran off the track at Watt Junction, N. B., on the New Brunswick & Canada road.

On the morning of the 14th a construction train on the Jefferson City, Lebanon & Southwestern road jumped the track while running backward near Jefferson City, Mo., and several cars went down a high bank. Three men were killed and two hurt.

On the morning of the 17th a passenger train on the Indianapolis & Vincennes road ran off the track in Indianapolis.

On the 18th the engine and several cars of a freight train on the Pennsylvania Railroad ran off the track at Bennington Furnace, Pa.

On the 18th the engine and several cars of a freight train on the Pennsylvania Railroad ran off the track near Mill Creek, Pa.

On the 18th several cars of a freight train on the Pennsylvania Railroad ran off the track near Mineral Point, Pa.

On the morning of the 19th a coal train on the Allegheny Valley road ran off the track in Pittsburgh, Pa., and three cars went down a bank and were wrecked.

On the morning of the 20th a passenger train on the Connecticut River road ran off the track at Holyoke, Mass., causing a short delay of trains.

On the night of the 29th a car of a freight train on the Western Maryland road ran off the track near Patapsco, Md., blocking the road till morning.

On the night of the 29th a freight train on the Toledo, Delphos & Burlington road ran off the track near Washington Court House, O., wrecking eight cars.

On the morning of the 30th a freight train on the Naugatuck road ran off the track in Waterbury, Conn., damaging several cars.

BOILER EXPLOSION.

On the morning of the 1st a yard engine on the Wabash, St. Louis & Pacific blew out its dome in the yard at Council Bluffs, Ia. The upper part of the engine was almost destroyed, the fireman killed and the engineer badly hurt.

OTHER ACCIDENTS.

On the night of the 2d the engine of a passenger train on the New York Central & Hudson River road broke a parallel rod when near New Hamburg, N. Y., and the loose end tore up the cab, injuring the engineer and fireman.

On the night of the 10th a car of a passenger train on the Wilmington & Weldon road caught fire from the stove when near Rocky Mount, N. C., and was destroyed.

This is a total of 113 accidents, whereby 36 persons were killed and 96 injured. Twenty accidents caused the death of one or more persons; 21 caused injury but not death, leaving 72, or 63.7 per cent. of the whole number, in which there was no injury to persons serious enough for record.

The record shows for the 12 months ending Dec. 31 a total of 1,458 accidents, 414 killed and 1,553 injured; an average per month of 122 accidents, 35 killed and 139 injured. This is a larger average than in any year heretofore included in our record.

Massachusetts Railroad Commission—Circular on Bridge Floors and Guard-Rails.

The following circular has been issued by the Massachusetts Railroad Commission to the railroad companies of the state, dated Boston, Dec. 1, 1881:

Although the proper form of track-construction upon bridges is a subject which has received the earnest attention of railroad men, civil engineers, bridge-builders and others for the past fifteen years or more, in this state as well as elsewhere, there are yet many bridges in the commonwealth who e track-construction leaves much to be desired. We therefore send you herewith two sheets of drawings, giving some examples of the many styles of track-construction for bridges now in use, and venture to add the following remarks concerning them and the general subject:

The object of all improved forms of track-construction on bridges has been to increase the safety of the train in the event of a derailment of one or more wheels upon or shortly before reaching the bridge; the bridge being considered a specially dangerous point in the event spoken of, (1) in case of a deck bridge, lest the train glide off the bridge and into the river below, or (2) in case of a through bridge, lest the train either break through the floor and fall into the river, or, striking the trusses of the bridge, knock them down, and fall into the river, together with the bridge-structure proper; in either case, and in any event, running the risk of far greater danger to human life, and of far greater property damage than would be run in the event of a derailment in excavation or on embankment. Especially are those through bridges liable to be knocked down, as stated, whose compression members are joined to other members, or among themselves (as in case of a disconnected line of top-chord), with a view looking mainly to the resistance of the connection to compression. Such incomplete connections are liable to be knocked or pulled asunder in the event of a sudden blow or pull coming from an unexpected source, as from an engine striking an end-post, or from a train of cars scraping alongside the trusses, and their failure to hold together entails the disintegration of the whole bridge, and its fall, together with all that may be upon it.

The same defect obtains, although to a less degree, with that form of connection for tension members which is designed to resist tension only. A thrust or push upon such

connections coming from an unexpected source is liable to loosen or destroy the connection of the several members of the bridge among each other, and to cause the fall of the bridge with all that may be upon it. And to show the reality of these dangers it should be added that there are many cases on record of iron as well as wooden bridges having been knocked down in the manner stated. Enough will have been said, therefore, to show that any devices that are calculated to prevent one or more derailed wheels from swerving to any great extent from the rails, and a tie system that will safely support such derailed wheels should merit the careful attention of railroad men.

Figs. 1-8 show different forms of track structure for bridges, designed to achieve these ends.

Fig. 1 shows 5 in. ties laid with 4 in. spacing, 5 in. x 8 in. outside guard-timbers cut down and bolted down to keep the ties in place, so that they might not be gathered together by any piece of wreckage and thus leave a hole for a following car to fall through. The inner edges lined with angle-iron, to prevent a derailed wheel from cutting into and mounting upon the guard-timbers and thus defeating their purpose of confining the deviation of the wheels from the rails within close limits. The use of flat bar-iron, on the vertical edge of the guard-timbers, as has sometimes been done, is not advisable. They are liable to buckle up and loosen off—the old snake-head rail set on edge.

Fig. 2 has 6 in. x 7 in. ties, laid with 5 in. spacing, cut down, as in fig. 1, but only spiked down, instead of being bolted. The edges of the four guard-timbers next the rail protected by angle-irons, as above. Between the guards and the rail, a floor of 6 in. x 3 in. plate iron, for a derailed wheel to run on. Outside of all, 10 in. x 10 in. outside stringers, cut down between the ties and bolted down.

Fig. 3 shows the system in use on the Boston & Albany Railroad, 10 in. x 10 in. ties laid with 8 in. spacing, outside stringers only, 12 in. x 14 in. cut down 2 in. and bolted down.

Fig. 4 shows 9 in. x 9 in. ties laid with 6 in. spacing; inside guard angle irons, filled with timber, bolted down. The nuts of the bolts on top, within handy reach of the repairmen. Outside stringers 10 in. x 10 in., notched down 1 in. and bolted down. The figure shows also the plank-walk and hand-rail in use on this long-span bridge.

Fig. 5 shows 7 in. x 8 in. ties, laid with 8 in. spacing. Inside guard-rails (old iron rails), and outside guard-timbers, 6 in. x 8 in., cut down 1 in. and bolted down.

Fig. 6 shows the construction used on some roads—inside guard-rails only, laid closer to the track-rails than shown in fig. 5. The guard-rail in both these cases spiked down with ordinary railroad spikes, and at the ends of the bridge running to a point, as shown in the diagram underneath fig. 6.

Against this system it is argued that the groove between the guard and the track-rail affords facilities for the accidental or malicious wedging in of foreign substances, which might derail a train. Which consideration leads to the system shown in

Fig. 7. Outside guard-timbers, replaced by outside guard-rails at the ends of the bridge which flare out to span a 12 ft. tie. Instead of guard-timbers guard-rails are not infrequently substituted.

In case of double-track railroads, the point or flare of the guard-rails, respectively, need, of course, be directed only towards approaching trains on each track.

Fig. 8, finally, shows the safety-structure in use on the Troy & Greenfield Railroad. It, or a similar structure, is also used on some Western railroads, the Atlantic & Great Western, among others, it is believed. It is claimed for this form of guard-rails, that, besides guarding a derailed wheel which may get off the track while the train is on the bridge, it will, in a large majority of cases, place such a wheel upon the track if it arrives at the bridge within range of the flaring outside guard-rails. Those who have used this form of safety guard-rail speak well of it.

Deraillments of single axles or trucks are especially common with freight trains, and so long as one corporation is obliged to receive the cars offered it by all other corporations, their number will certainly not diminish. The danger of a derailed car or part of a train reaching a bridge seems to us, therefore, a real one, and for this and other reasons the Board of Railroad Commissioners commend to the railroads of this commonwealth a consideration of the examples shown, and of their several merits and defects, and the application upon all of the bridges within the state of a safe and efficient form of track-construction, the essentials of which seem to be strong and closely laid ties of sufficient length; guard-rails, or guard-timbers lined with angle-iron; these guard-timbers outside the track and notched and bolted down, or else separate outside stringers notched and bolted down to the ties.

Contributions.

Notes by the Way—Railroads vs. Street Cars.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Within five miles of Boston the track of the New York & New England Railroad is crossed by a number of street car routes. Some of these are decidedly pleasant, all of them fairly cheap; but price aside, it is said that, in summer, there are those who prefer an early breakfast and a long car ride to any other method of getting into the city. We may suppose, therefore, that the Boston merchant has his own peculiar leisurely habit, and what might hold good of suburban traffic in New York would not in Boston—at least not in summer.

Nevertheless, in April last the New England road determined to make an effort for this local traffic. It withdrew its season tickets this side of and to Dorchester (five miles), replacing them by a package ticket, five for 25 cents; announcing nineteen trains for each direction. The report of the State Commissioners just issued says:

"It is gratifying to know that the experiment on the New York & New England road has been thus far completely successful. The returns for six months show an increase of receipts at the rate of 60 per cent. per year. This great increase accompanying a very large decrease of charges is a fair measure of the accommodation afforded. No complaint has been made except that rents have risen in the favored district."

Small average loads of the horse cars are also said to testify to the success of the new accommodations; but it requires time to take the full measure of all such movements.

Previous to these changes the railroad company had offered a free ticket to any occupant of a new house built at any station this side of Franklin on the main line, and between Brookline and West Medway on the Woonsocket Division. The ticket was good only to the occupant

of such house (transferable to a successive occupant) for as many years as the cost of the house in thousands of dollars, not exceeding three.

Similar offers have been made by other roads to the building occupants of houses, but a free ticket bears so small a ratio to the cost of house-building that such an offer was not very tempting. As an incentive to builders, and especially as an effective instrument and argument with house-renters, this improvement is decidedly promising, and the New England road claims moderately valuable results from it.

WORKINGMEN'S TRAINS.

Excepting in the way of cutting up the other party, Japanese fashion, by committing *hari kari* on one's own abdomen, a General Passenger Agent is limited, in hopeful efforts to increase traffic to two lines, the encouragement of local traffic and the culture of tourist and excursion business.

Even in these he is limited to those peculiarities which are characteristic of his road; he cannot reason, merely from the success of others in any promising line; and above all his actions must be *timely*. Shakespeare's lines ("There is a tide in man's affairs, which taken at the flood," etc.), should be the desk-motto of every passenger agent.

The Massachusetts, or rather the Boston, workingmen's trains are a suggestive illustration. The only roads running such trains, if I am not in error, are the Boston & Maine and the Eastern roads, although other roads sell a few workingmen's tickets which are honored on the regular trains. The Boston & Lowell have offered anew, as I understand it, to run such a train if the required number of tickets is purchased.

The Eastern's train carries on an average 450 passengers daily in each direction, and some time ago it began to run an advance regular train to relieve this one, which had grown to eleven car loads. Three years ago six cars were sufficient.

The Eastern road had, however, a piece of line and country admirably adapted to such a train, and for all that has been said in the past, cheap-rate local traffic of this sort is now everywhere getting a new appreciation, for although it pays a net income of \$70 per day, there are many other consequent sources of income to be taken into account.

The Eastern road is a notable type of a local road, seeking, perhaps obliged to seek, through business. It has 283 miles of road (108 to Portland), yet 77 per cent. of its 5,500,000 passenger-train mileage is made within 57 miles of Boston. Should its average passenger start at Boston—as he does not, for the road has a large inter-state traffic—he would never get further than Salem, for this is his average journey. This individual travels 594,000 miles in August, but only 378,000 in January; as a "counter" he will go even 36 miles in summer, but only 20 or 25 in winter—but it should not be inferred that he commutes only to Boston.

NEW CARS.

Human progress is governed by this singular yet very simple law, that the development of any quality, or of any side of life, must come through an exaggerated estimate of its importance. This law was seen in literature in the amount of attention given in Addison's and even in Irving's day to mere literary style, and we have an example before us in the so-called æsthetic craze. This is simply a stage of development of better taste in the common wares and surroundings of life, and cars are coming in for their share of exaggerated attention.

The latest cars of both the New England and the Eastern road are especially worthy of remark in this respect. Those of the New England road, which were built last summer, are finished in ash, with a narrow strip of mahogany in the cornice and a carved block of the same wood (in some cars, of ash wood) set into the centre of the window panel. This panel has also a simple square fluting at its corners, and the cornice bears parallel lines of narrow molding carved out of its solid substance. There is also ornamental carving about the windows. Some of the cars are ceiled above in ash veneer—the plain wood varnished; the ceiling of the clear story being a very neat headlining of neutral tint ornamented with a few simple figures in gold. In others the ash veneer is painted and gilded in the same style as the headlining of the clear story.

The effect is admirable, particularly so in those cars having the plain wood veneer ceilings. There is, however, an expanse of varnished surface above the end windows which could be tastefully and profitably improved by an end ventilator, such as may be found on other New England cars.

Each car contains in the closet a wash-basin (which, however, cannot be used in winter), and closet apparatus of improved forms.

The Eastern cars cost much less money. Indeed, I doubt if better cars for the money can be found anywhere. Those already built are in black walnut, ornamented in simple fluting and furnished with the Pullman curtain instead of blinds. The reason for this change is the amount of dust which collects upon the blind-slats, and which soils the hands and clothing of whoever makes use of the blind. Curtains have also the advantage of being a warmer and better protection from the cold-air current from the glass in winter.

Besides those in walnut, other cars are being finished in redwood and some also in cherry. The redwood gives a very pretty general effect, but is not a uniform wood, although well worthy more attention, as it offers the opportunity of a relief from so much mahogany as is now used.

Both those styles of cars—those in walnut and those in redwood—are very pleasing, until the eyes are raised to the head-lining, which effectively spoils the car. The colors of this lining are not even harmonious with each other, and the whole has a sad want of concord with the excellent taste

of the woodwork. Walnut is, also, too dark a wood for car finish.

The Eastern road has also some very economical cars (costing, I think, about \$2,800), finished in yellow pine, and is trying one of them this winter with a stove to see what will happen to the contained turpentine of the wood.

A gentleman connected with the Peabody Institute, at Salem, is now engaged in collecting samples of New York state and Eastern woods for the Museum of Central Park, New York city.

There is a small collection at Salem, one of the earliest made in this country, and I observed an excellent one in Mr. Fisk's office at Springfield, who also possesses a special collection of California woods made by the Master Car-Builder, if I remember correctly, of the Union Pacific.

The time is evidently ripe for a new standard of taste and a new method of finish in cars, and we may as well make the best of it. The movement is very plainly in the direction of greater simplicity, one wood simply ornamented by cutting into its substance by hand-work or by machinery. Let us also hope that it will take the direction of unobtrusiveness, of general effects which shall not push themselves on our attention by great contrasts or excessive "style." The car which is simple and unobtrusive will not have to be rebuilt in the next five or ten years because its style has become ridiculous, but I fear some other cars will be under just this necessity; for the American people are changing in taste as no mass of people ever did in nearly so limited a time. It is therefore wise to keep on the negative side of the movement—simplicity and neutral tints—until the people have tired of the subject, and the craze has done its work, and left some sort of standard as a legacy to the future.

X. Y. Z.

Report to the Western Railroad Association.

The following is the report submitted to the Western Railroad Association at its annual meeting in Chicago last week by the Executive Committee, composed of Messrs. B. F. Ayer, T. B. Blackstone, T. F. Withrow, B. C. Cook and A. L. Osborn:

The Executive Committee of the board of directors of the Western Railroad Association respectfully submits its annual report—the fourteenth—for the year ending 31st December, 1891.

The year has been one of earnest activity, equaling any previous year in the amount of the work done and in the economy of its management, and excelling every previous year in the immediate practical benefits arising therefrom, perfect harmony and confidence having characterized both the business and personal relations, each to the other, of the officers and members.

The most satisfactory progress made during the year has been in the success which has attended the carrying out of the recently adopted policy as to the relations of liability for patent infringement between the railroad companies on the one hand, and, on the other, the manufacturers and supply agents. This policy is fully set forth in the sixth, seventh and eighth of our standing rules, all of which rules are reprinted with this report. The eighth is as follows:

"If the manufacturer, without any advice to or from the Association or the company, and entirely on his own motion and without any specification therefrom from the railroad company, puts into the car or locomotive a device against which a patent claim is subsequently made, we propose that the manufacturer shall, according as it may be determined by the Association, either settle the claim or pay the expenses of a defense to the claim, which defense shall be conducted by the Association, if it so determine."

No just criticism has been made upon this rule, but on the contrary, the manufacturers and the members of the Association have mutually and uniformly carried it out whenever called upon to do so. While it is matter for congratulation that the members have so fully sustained the officers in the enforcement of these rules by discriminations in the distribution of orders for supplies, it is to be remarked that unless the terms of such settlements shall be subsequently adhered to fully and in good faith by the manufacturers, an evil less in the amount involved but greater in its uncertainty and difficulty than the original liability will result to the railroad companies. It has not infrequently happened during the year that a manufacturer would make a settlement under this eighth rule, thus securing a full release for the past to the railroad companies without cost to them, and to himself a license for the future to manufacture and sell, and the Association, by circular letter, would recognize the patent or patents, and advise its members that subsequent purchases from the parties to the settlement, and from them or their licensees only, would be free from charges of infringement. Whereupon the manufacturer, having by virtue of the settlement become a licensee, would wilfully and secretly violate the terms of the license, work in law a forfeiture thereof, and thus involve the railroad companies making purchases thereafter in fresh and more annoying difficulties. Such practices can not be too strongly condemned. The repetition of these occurrences can be prevented by the same means which have established the general policy of these rules, namely, that the railroad companies do not purchase, not only of those who will not protect the use of the article sold, but also of those who will not keep their agreements in the premises. The word of a man of honor should be as good as his bond, and his bond should be at least as good as his word. It is not proposed that licensors shall use this Association, without just cause, to aid them in the cancellation of licenses granted; yet the railroad companies should keep upon the safe side of all such matters, especially in view of the excessively unjust rules of law which in patent litigation apply to them as users, to which reference is hereinafter made. It is proposed that if a licensor shall hereafter make out a *prima facie* case of such a violation of the terms of such a license as would justify work a forfeiture thereof, the licensee having had an opportunity to refute the same and failing to do so, the officers of the Association will in all such cases promptly notify the members thereof, and recommend the members to thereupon cancel subsisting contracts with, and not make subsequent purchases from, such licensees. In the instances during the year when such violations and forfeitures have occurred, the members have pursued this course, promptly cancelling advantageous contracts for supplies for the sake of carrying out the general policy laid down in these rules. In one instance of such a violation and forfeiture of license, and a consequent cancellation of orders and loss of trade, the Secretary of the Association was sued for \$25,000 damages. This suit was defeated. We think we can say with absolute accuracy that every single other application

which has been made of these rules since their adoption has been beneficial and satisfactory to not only the railroad companies, but also to both licensors and licensees.

The character and main objects of the work of the Association have almost entirely changed, and the work has increased fully forty-fold since its reorganization in 1874. If all its members were as constant as a few are in referring all questions and matters which come within its purview, the requests for investigations, opinions and negotiations of a single month would occupy many months, and the present machinery of the Association would be wholly inadequate thereto. Both the necessity for the Association and the demands upon it are constantly increasing. One practicable and just means for meeting these constantly increasing demands is by the rigid enforcement of the rules referred to, and by other means, to induce the manufacturers and supply agents to give careful attention to these questions of patent liability in advance, and thus share their just proportion of the responsibilities which the railroad companies have heretofore borne almost alone; and thus would a large proportion of these difficulties of infringement be met and avoided at their very inception.

After the manufacturers and supply agents shall come to give the care and attention to these questions which they require, there will still remain in the manufacturing and repairs of the railroad companies themselves an imperative necessity for adherence on their part to the first of our standing rules, which is as follows:

"No member shall experiment with, or use, any improvement, however trifling, whether made upon the road or presented by the owner of a patent, without first submitting the same to the Association for a report upon its patent relations; and the manager of each company shall issue a general order, requiring all officers and employees to submit to him, or some other specified officer, full descriptions and drawings of such improvements, and that officer shall submit the same in full to the Association."

During the year 94 new subjects matter have been so submitted to and reported upon by the Association. Appended to this report is a list of the patents and subjects matter concerning which opinions have been heretofore given to the members.

In calling the special attention of the members to this rule, we request that they submit *small accurate models* with requests made for investigations, for the purposes of greater certainty in the opinions given, of mutual information, and of completing the collection in the model room of our offices, and for the further and very important reason that in a majority of cases alterations are made in inventions after they are patented, which alterations raise new and important questions. It is necessary that devices submitted shall be examined *exactly as they will be used*, and this is insured only by submitting an accurate model.

A prejudice has existed in the past which crippled our efforts both in the courts and in Congress, which is entirely without foundation, and which has been almost entirely corrected, to the effect that railroad companies appropriated patent property at will and made return therefor only at the end of tedious and expensive litigation. The rule which has now for years obtained in the Association, to refuse no man's claim without giving him the reasons therefor, has materially aided in arriving at reliable conclusions upon these matters as they arose, and in destroying this prejudice.

By a full compliance with the rules herein quoted, these property rights will be duly regarded, these prejudices will be overcome, the difficulties named will be measurably met in advance, and the Association will have the full confidence of those with whom it has to do.

As indicated above, the examination of the patent relation of devices desired to be used, and the adjustment through the vendors of claims arising out of the use of articles bought, has constituted recently the greater, the most important, and the most valuable part of the work of the Association. The fact that the litigation in its charge is decreasing constantly is good evidence of the success of this work. In 1878 there were 112 suits on the docket of the Association. There are at the close of this year 70, of which 62 were brought under patents long since expired, and involve the following familiar subjects matter which have been in litigation for many years: "Tanner Brake" (37), "Swage Block" (14), and "Hodge Brake" (11). Of the remaining eight, two were brought under the patents of the National Car Brake Shoe Co., and the remaining six represent six different subjects matter. While we think none of these suits can be maintained, it is worthy of the remark that the use by the railroad companies complained of in these eight more recent suits was entirely without any advice to or from this Association. No legal controversy has yet arisen from any use permitted by the opinions given to the members during the eight years last past. Only one new suit (Bennett vs. Ill. Cent. R. R. Co.) has been commenced during the last year. If this suit was based upon a valid claim it would concern quite a large number of the members, but our General Counsel very confidently advises us that there is no probability of its being maintained.

The case of *Sayles vs. The Lake Shore & Michigan Southern Railway Company*, now pending in the Supreme Court, in which the questions were raised whether a suit in equity which was commenced after the expiration of the patent can be maintained for its infringement, and whether the state statutes of limitation apply to suits for infringement, was submitted on printed briefs at the October term, 1879, with the hope of obtaining a speedy decision on these important questions. The submission, however, was set aside by the Court, and the case ordered to stand over for oral argument in its regular course. The case was fully argued early in this month (December, 1881), and a final decision thereof may be expected soon after the re-assembling of the Supreme Court in January next. We look upon this decision as of great importance in its possible effect upon the litigation pending; yet, as to these particular cases pending under the Tanner brake patent, we repeat the opinion so often heretofore given, that the members of the Association need have no apprehension whatever as to their final result.

Some additional testimony has been taken in the swage block cases, but they stand substantially in the same condition as at the date of the last annual report.

The suit of Gardner & Ransom, brought under the Gardner coupling-valve patent of 1872, against the Lake Shore & Michigan Southern Railway Company, at Cleveland, involving the coupling in general use for connecting the air pipes of the Westinghouse brake, was heard early in the year, and it was held by the Circuit Court that the patent was not infringed. A decree for the defendant was entered accordingly. No appeal therefrom has been taken.

The case of *Wm. Tracey*, under his switch patent of 1867, vs. the Chicago & Alton R. R. Co., has been settled, the settlement involving all the present and future liability of the present and future members of the Association; and this suit was thus determined by a decree in favor of the complainant.

The other pending cases, a list of which is appended hereto, and concerning which full information will be given upon application, remain in substantially the same condition as at the date of the last annual report.

The mere existence of the Association with its facilities for defending against unjust claims, prevents the preference of many claims and the bringing of many suits with which the railroad companies would otherwise have to contend.

Your committee was able, in its last annual report, to state with some definiteness the financial value of the claims which had been settled through the Association during the previous year. Claims involving as many millions have been settled during the last year, and by far the larger part thereof, both in number and in the amount involved, have been settled by the manufacturers under the eighth rule above referred to. But, for the reason that the litigation under these claims had not proceeded to an adjudication of the question of damages, an accurate estimate of the amount involved cannot be given.

The practical commercial effect, so far as this Association is concerned, of the circular letters to the members, which have followed some of these settlements, should be to confirm the monopoly conferred by the government in the owners of and licensees under the patents involved. The Association does not propose to make such settlements for its members, or to cause the manufacturers and supply agents to make the same, except in cases of valid patents under which damages have accrued to a considerable amount, and further to be quite conservative in the use of the power of recommendation as to patronage in orders for supplies, which the members have so willingly placed in its hands. In addition to the satisfaction of accrued damages without cost to the railroad companies, they, by these proceedings, receive information which is necessary to render purchases in the premises intelligent and safe; and the option to purchase, or not to purchase the articles thus covered by valid patents at the price demanded, remains.

The decree of the United States Circuit Court for the Northern District of Illinois, Drummond and Blodgett, J., in the cases in which the Washburn & Moen Manufacturing Company, of Massachusetts, and I. L. Ellwood were complainants and Jacob Haish and others were defendants, held in effect that many thousand tons of barbed wire fence in use by the members of the Association had been bought by them of dealers who had no right to sell the same; and the claimants contended that the railroad companies were liable for the difference between the cost of the barbed wire fence and board fencing. Immediately upon the delivery of the opinion of the Court in these cases the Secretary of this Association commenced negotiations with the claimants which resulted in securing terms of settlements which the manufacturers accepted willingly, pursuant to which the owners of the patents involved executed a full release for the past liability of the members of this Association, and the members were informed by circular letter as to the dealers authorized by such settlements to furnish barbed wire fencing coming within the patents so sustained by the Court.

Other settlements have been made during the year, of which it is not necessary to make special mention here; and a number of negotiations of very considerable importance are now in progress, and have been practically determined, although the adjustment of some minor details, and the execution of releases, licenses and contracts have not been accomplished at the date of this writing.

We call special attention to the italicized portions of the following which we quote, with the approval of experience, from the annual report for 1879: "To take the obligation of the builder, to protect the companies in the undisturbed use of the cars or locomotives bought, is not sufficient, but should in all cases be taken for what it is worth." One reason for the statement that such obligations are not sufficient is found in the unparalleled and unreasonable rules which apply in determining the amount of recoveries from users of patented devices. The manufacturer or supply agent is held to be liable for that portion of the actual profits made in the manufacture and sale which is attributable to the patented device or process, while the user is called a *trustee* for the owner of the patent (notwithstanding that the law also calls him a *tortfeasor*), and he is charged with the profits made out of the use, which in turn is made up on *theories of savings* evolved by the cunning of experts and solicitors. These rules of recovery logically and legally carried out would have resulted for the railroad companies in the Tanner brake litigation to sixty millions; in the swage block cases to nearly five millions; in the Williams head-light controversy to nearly five millions; and under the barbed wire fence claims to how many dollars?

It is fair to say that when in 1876 the Association commenced its efforts to secure reforms by Congress in the patent law, the whole country had become "patent mad," and the rules of recovery referred to were partially a result of this madness. For the reason that the interests of the members of the Association had ceased to be urgent in the premises these efforts were almost entirely discontinued in 1879. No just or cogent reason, however, can be given why these rules should be adhered to; why the penalties upon manufacturers and vendors in open market should not be more severe than the penalties upon users; why patent claims, like all other claims, should not be subject to some statute of limitations; why licensees, like assignments under patents, should not be recordable and license rights be thus protected against the technical claims of patent sharks; why Congress should not say, as the lower courts have said, that the license of a joint owner in common of a patent should protect his licensee against his joint owners; and why the patent law should not be reformed in other respects in which it has been frequently demonstrated to be either unreasonably silent or flagrantly unjust. Bills have already been introduced in the present Congress proposing amendments to the patent law, but they seem for the most part intended to furnish relief only for certain classes of users among the people, rather than to proceed upon general principles of justice, which shall relieve all who come within them. The present status of the business of the Association would not, in our opinion, justify any extended efforts or expense in this regard, yet we desire to earnestly suggest to the members that they shall embrace each opportunity to aid in establishing and maintaining a correct public opinion upon these questions, which may, sooner or later, find recognition in just and proper enactments by Congress.

Sec. 4 of the Act of March 3, 1879, making appropriations for the Post Office Department, provides as follows: "That all cars, or parts of cars, used for the railway mail service, shall be of such style, length and character, and furnished in such manner as shall be required by the Postmaster-General, and shall be constructed, fitted up, maintained, heated and lighted by, and at the expense of the railroad companies."

In some of the divisions of the railway mail service, the Postmaster-General, through the division superintendents, has specified bag racks, tables, etc., which have been patented, the patents upon which we have found to be valid, as covering new and useful improvements, and the use of which, so far as we could ascertain, would not infringe any other existing valid patent. The representatives of these patents, and some of the government officials assert, in view of some decisions by the United States Court of Claims, that when the railroad companies contracted with the government, they took their contract subject to the power and right in the government to, by general law, increase their duties and expenses; and that in any event this act of 1879

applies to and is necessarily a part of every contract executed since its approval. The question of the duties and liabilities of the railroad companies in the premises, will depend upon the two questions, Do the companies in any sense use these improvements? and, Do they reap any benefit therefrom? and further upon the terms of the subsisting contracts for the transportation of the mails. These questions do not come within the province of the Association to determine, but they are assuming sufficient importance to warrant our calling the attention of the members thereto, with the further information that at our suggestion the owners of these patents will make application to Congress for an appropriation which will give the government the undoubted right to make such specifications.

The Treasurer's report herewith submitted shows:

Dr.		
Balance from 1880.....	7,705.02	
Receipts during the year.....	25,281.79	
		\$32,986.81
Cr.		
By authorized disbursements for salaries and expenses.....	\$26,837.08	
By cash in the general fund, Dec. 31, 1881.....	5,649.73	
By " " incidental fund.....	500.00	
		\$32,986.81

It will be noticed that, as compared to the year 1880, there has been an increase in the salary account of \$3,842.93; in the general expenses of \$931.16; and a decrease in the office expenses of \$1,717.93, and in litigation expenses of \$1,676.52, and in the miscellaneous expenses of \$374.83, making a net increase for the year 1881 of \$1,004.81.

The increase in the new subject matter submitted for investigation has necessitated an increase of over \$1,300 in the expense of examining the records of the Patent Office, and some slight further increase in this item may be expected.

In 1879, the work of selecting, classifying and properly indexing printed copies of all patents relating to railroad devices granted by the United States since 1867, was commenced. During the past year the services of a clerk at Washington in this work have further increased the salary account, and the purchase price of such additional copies accounts for the increase in the general expenses. The decrease in the office expenses is mainly in the account of furniture and repairs, our present offices having been largely fitted up during the year 1880.

While it is the general policy of the Association that each year's income shall, as nearly as possible, meet its expenses, so that neither surplus nor deficiency shall result, it is also a part of its general policy to keep a surplus of about \$6,000 on hand for contingencies, and to carry the Association through the first quarter of each year, and through the first of the second, third and fourth quarters, when its funds would otherwise be insufficient to meet its expenses.

The following table shows the amount of the assessment levied and the total amount of the expenditures, and the cash balance at the end of each year since and including the year 1874, when the Association was reorganized:

Year.	Am't of as'sment.	Am't of ex'diture.	Cash bal.
1874.....	\$61,181.40	\$35,274.37	\$8,555.70
1875.....	20,824.78	26,013.78	5,037.75
1876.....	30,664.02	26,176.86	5,303.01
1877.....	23,972.77	26,654.59	3,434.71
1878.....	27,318.51	29,390.69	1,795.02
1879.....	27,240.81	26,740.50	5,803.33
1880.....	27,624.96	25,832.27	7,705.02
1881.....	25,276.43	26,837.08	6,149.73

* Three installments only collected.

A source of revenue heretofore has been in the assessment of railroad companies joining the Association after the commencement of the year, and after the general assessment has been made. Additions to the membership of the Association which will materially contribute to its income cannot be expected hereafter, for the membership now includes almost every road between Buffalo and San Francisco—Manitoba and New Orleans. It will therefore be necessary, to continue the policy above noted, that the assessment for the next year shall be calculated to meet fully the expenses to be incurred.

The Locomotive.

[The following was published in *Harpers' Weekly* in 1872.]

They call me a mass of iron and brass;
They say that a spirit I lack;
That my real soul is the grimy man
In the wooden pen on my back;
That the flame I devour and the steam in my veins
Are the creatures of man alone,
And I have no mind but the mind of men,
Those beings of flesh and bone.

Let them say if they will, and whatever they will,
Though had they but noted me when
I was scurrying over the iron rails,
The wonder and pride of men—
Had they watched as they might, they had seen a will,
As I sped on my iron path,
And a purpose of terror when once I awoke,
And aroused to a terrible wrath.

I have borne their yoke in a patient way
For many a weary hour—
The pity that filled my massive breast
Forbade me to use my power;
But I am not always a passive thing,
Nor forever with joy I scream,
As I rumble and clatter and scurry along,
With my nostrils breathing steam.

For when they are proudest to think me theirs
My patience a moment fails,
And then, with a thousand wretches behind,
I leap from the guiding rails
Over the lofty embankment side,
And plunge to the depths below,
While the careless laugh of the people I draw
Is changed to shrieks of woe.

And so to-night, in the midnight deep,
With my glaring eye I peer
Through the darkness that covers the path before,
And I startle the engineer;
For I whirl from side to side, and I pant
And struggle and scream with delight;
Reverse! down brakes! there's a tree on the track,
And Death rides abroad to-night!

Some are asleep in their seats, and dream;
And others, in accents gay,
Are telling light stories of what they have seen,
Or discussing the news of the day;
And some are thinking of things long past;
And others again there be
Who are longing to meet their children and wives
In the homes they never may see.

A jar and a crash! I scream as I leap,
And feel my stout ribs bend;
While the cars they crush like houses of card,
And their strong beams splinter and rend;

And here is a head, and there is a limb,
And mark, when the lights are brought,
The quivering flesh that once was a shape,
And walked and talked and thought!

You say that I am an inanimate thing;
That I neither can know nor feel;
That merely steam through an iron rod
Is moving my driving-wheel!
Why, I planned this thing, and brooded alone,
And thought of it day by day,
And waited my chance, and bided my time,
As I sped on my tiresome way.

You builded a monster of iron and brass,
And you fed it with water and flame,
And you thought it a creature your finger-touch,
Whenever you would, could tame;
Had you known its temper, or studied its way,
You never had felt its might,
And the mangled dead on the cold earth spread
Were living and merry to-night.

TRAFFIC AND EARNINGS.

The Omaha Pool.

Probably the oldest and most uniformly successful traffic apportionment in the country is that of the three roads between Chicago and Council Bluffs, which have divided the through traffic, both freight and passenger, almost ever since the last one of them was completed. The Wabash has now nearly completed its line from Chicago to Council Bluffs, and last week it was admitted to the pool and allotted an equal share of the traffic with the three others. This pool can scarcely be said to have had an organization heretofore, and has had no officer whatever. On admitting the Wabash, however, the office of Commissioner was established, and Mr. Geo. H. Daniels, late General Ticket Agent of the Wabash, was chosen to the position.

Limiting Issues of Passes.

At a meeting in Chicago Jan. 12 the following agreement was adopted by the railroad companies whose names are mentioned therein:

"The following agreement was this day made by and between the Chicago & Alton, Chicago, Burlington & Quincy, Chicago & Northwestern, Chicago, Rock Island & Pacific, Hannibal & St. Joseph, Missouri Pacific, and Wabash, St. Louis & Pacific railroad companies:

"1. That the issue of free passes by the parties hereto to merchants in the city of Chicago or merchants in the city of St. Louis, to be forwarded by them to their country customers, shall be entirely discontinued, and no passes shall hereafter be issued in that way.

"2. That the parties hereto shall withdraw their books of passes from Missouri River and other points, and entirely discontinue the practice of allowing their general agents to furnish free passes to merchants, not only at Missouri River points, but at all points East and West.

"The object of this agreement is to entirely discontinue the former practice of giving passes to merchants residing at any point on the various lines, or to their traveling men, it being understood that each road, through its President, Vice-President, or General Manager, may exercise its own judgment with reference to furnishing free transportation to promote local interests on its own line."

The same roads have entered into an agreement concerning passes and advertising tickets for editors and publishers, not to issue any kind of transferable tickets on account of advertising, and not to issue annual or season passes in payment for advertising to any but persons exclusively engaged on newspapers, and not in any other business. These tickets or passes are to be kept in one office or department only of each road. The last clause of the agreement is:

"Nothing contained herein shall be construed to prevent the issuance of strictly complimentary, non-transferable passes to any editor or publisher who may be actually engaged in editing or publishing any newspaper or other publication; but in such cases no notice, advertisement or other publication shall be asked for or accepted in return for said passes. They are to be fully and entirely complimentary in every sense implied by the word."

Ticket Commissions.

Mr. A. H. Hanson, General Passenger Agent of the Illinois Central road, has issued the following circular containing instructions to ticket agents:

"In accordance with an agreement entered into by this company, at a meeting of general passenger and ticket agents, at Chicago, Dec. 15 and 16, 1881, convened to consider the ticket-commission question, the following instructions are given, viz.: That on and after Feb. 1, 1882:

"1. You will not, by yourself or by or through any other person, accept any remuneration or gratuity whatever from any quarter whatsoever save from this or any other company (such as express or steamship companies) of which you are the duly and publicly authorized agent.

"2. You must sell to passengers tickets over routes of their own selection. When passengers have no choice, ticket by the most desirable route, thereby reflecting credit on yourself and the line you represent.

"3. You must not check baggage beyond the destination of the ticket issued by this company, unless under special instructions from this office.

"4. You must not give or send to any railroad company, or to any individual, any commission, voucher or other statement that gives all or any portion of your ticket sales; and you must not allow any person excepting the properly authorized officers of this company to have access to your books, tickets, ticket-cases, or other property in your custody, by which it would be possible for your ticket sales to be known.

"Any agent violating the above instructions will be discharged, and will not be re-employed for one year after dismissal, by this or any other company party to the non-commission compact.

"In connection with the above, I would add that these instructions are given to be strictly obeyed, both in the letter and in the spirit, and the penalty will surely follow any failure to carry them out. The intention is to make a fair and honest trial toward breaking up the commission abuse."

Another circular, addressed to general passenger agents, says:

"I would respectfully request that you prohibit any one in the interest of your company from paying any ticket agent of this company, or any person for or in the interest of the ticket agent, any remuneration whatever in any way, either directly or indirectly."

Southwestern Association.

One of the stumbling blocks of this Association has been the working of lines west of Missouri River points by Association roads, which could make the rates so as to command the shipments through the Missouri River towns. It was recently agreed that the traffic of such lines should be included in the pool, and that a special allowance should be made to the company working it on that account. Last week the Missouri Pacific was allotted 5 per cent. of the east-bound freight

of the St. Louis Division on account of traffic of its leased Central Branch Union Pacific west of Atchison. The old percentages will apply to the other 95 per cent. of the traffic. An allowance in the Northern Division is to be made to the Burlington on account of the Burlington & Missouri River in Nebraska.

West-Bound Freight Rates.

The New York Central and Erie last week announced the following rates per 100 lbs. from New York to Chicago: 1st class, 30 cents; 2d, 25; 3d, 20; 4th, 15. These rates are considerably below the nominal tariff lately in force, but are not below the rates at which business has been taken for some time.

Boston rates to Chicago are the same, but the Grand Trunk makes its rates 20, 17, 14 and 11 cents on the respective classes.

It is reported that contracts have been taken at still lower figures than those given above.

THE SCRAP HEAP.

Locomotive Building.

The machinery for the New York Locomotive Works, in process of erection at Rome, N. Y., ordered from a Boston house, is to be delivered in March next.—*Boston Manufacturers' Gazette.*

The Baltimore & Ohio shops at Mt. Clare, Baltimore, have just completed a passenger engine with 19 by 24 in. cylinders and 69-in. drivers. The engine weighs 45 tons. Several more of the same class are in progress.

A movement is reported to establish locomotive works in St. Louis. A company is to be organized with a capital of at least \$500,000 for this purpose. Col. J. W. Paramore, of the Texas & St. Louis Company, is said to be the head of this new enterprise.

The Manchester Locomotive Works at Manchester, N. H., have recently shipped locomotives to the Atchison, Topeka & Santa Fe and the Marquette, Houghton & Ontonagon roads.

The Boston & Albany shops in Springfield, Mass., have just turned out a new freight engine with 20 by 26 in. cylinders and 4½-ft. driving wheels.

A Louisville dispatch says that capitalists of that city have subscribed \$1,000,000 for the purpose of establishing locomotive works there, and that a company is to be organized on the spot.

Car Notes.

The Lobdell Car Wheel Co. at Wilmington, Del., has work well advanced on its new foundry.

The Swissvale Car Works, near Pittsburgh, Pa., which have been idle for some time, have been started by the Woodruff Sleeping Co., which will employ about 100 men there.

The Central Pacific is building new car shops at West Oakland, Cal., the main building being 153 by 80 ft., with two large wings.

It is proposed to start a car-wheel foundry in Negaunee, Mich., in the Lake Superior region. It is said that a large amount of stock has been taken.

The Eames Vacuum Brake Co., at Watertown, N. Y., this week received an order from the Union Pacific road for brake equipments for 300 freight cars, to be furnished as soon as possible.

The Old Colony shops in Boston are building 12 new passenger cars, to be used for the Nantasket Beach business next summer.

Bridge Notes.

Bids will be received by F. Braun, Secretary of the Department of Railways and Canals, at Ottawa, until Feb. 10, for a bridge of steel or iron on the Canadian Pacific road over the Fraser River in British Columbia. Plans and specifications can be seen at the Chief Engineer's office in Ottawa.

Wilkins, Post & Co., of the Atlanta Bridge Works in Atlanta, Ga., have recently taken contracts to build one iron span of 175 ft. for the Houston & Texas Central; one iron span of 158 ft. over Flint River on the Savannah, Florida & Western road, and three combination spans of 156 ft. each over the Savannah River for the Port Royal & Augusta road.

Mr. Charles O. Brown, of the Riverside Bridge & Iron Works at Paterson, N. J., has taken into partnership Mr. Thomas O. Whitney, and the firm will be hereafter Brown & Whitney. The office of the firm is at Nos. 53 and 54 William street, New York.

Iron and Manufacturing Notes.

The Standard Iron Co., Limited, a new organization, has bought the Fulton Rolling Mill, near Norristown, Pa., from the Receivers of the Philadelphia & Reading Coal & Iron Co., and will start it up as soon as necessary repairs can be made.

The Railway Barb Fence Co., at Cuyahoga Falls, O., has an order for a large amount of its fencing for a railroad in Queensland, Australia.

The Western Iron Boat-building Co. in St. Louis, besides a large amount of boat work, is building machinery for ventilating the St. Louis tunnel, and also the iron piers for the new railroad bridge over the Ohio at New Albany.

The troubles of the Siemens-Anderson Steel Co. are not yet settled, but there seems to be a probability of a compromise with the creditors.

The Central Iron Works at Helena, Ark., are running the rolling mill on merchant bar.

At the annual election of officers of Swift's Iron & Steel Works, in Cincinnati, the following were unanimously elected: E. L. Harper, President; Geo. E. Clymer, Vice-President; John L. Pfau, Secretary; Jas. H. Mathews, Treasurer; L. T. Hubbard, Mill Superintendent. Mr. Alex. Swift, the late President, retires from business entirely, having acquired a considerable fortune during his 25 years in the iron trade.

The Sharpville Furnace Co. at Sharpville, Pa., is preparing to build a new blast furnace.

The St. Louis Nut & Bolt Co. is full of orders and is making a large quantity of bolts, rods, etc., for the St. Charles Bridge.

The Cincinnati Steam Forge Co. is adding to its works in Cincinnati.

The Standard Coal & Iron Co., a new organization, has contracted to buy Buchtel, Shawnee and Vilas furnaces, with several large tracts of coal and iron land in the Hocking Valley.

An agreement has been made for the sale of the extensive works and property of the Southern States Coal, Iron & Land Co., at South Pittsburgh, Tenn., to the Tennessee Coal, Iron & Railroad Co. The South Pittsburgh property has cost about \$1,500,000.

The six charcoal furnaces in the Lake Superior region, having eight stacks altogether, turned out in 1881 altogether 52,953 tons of pig iron, as follows: Pioneer, 17,030; Menominee, 8,336; Florence, 714; Carp River (three stacks), 10,253; Jackson, 4,680; Deer Lake, 7,831; Martel, 4,109; total, 52,953 tons.

The Rail Market.

Steel rails are quoted at \$58 to \$60 per ton at mill, but

the market is weak and buyers are not pressing. There is nothing doing in foreign rails.

Iron rails are also quiet, with little new business reported. Quotations continue at from \$48 per ton at mill for heavy sections up to \$53 for light rails.

Spikes continue to be quoted at \$3.15 to \$3.25 per 100 lbs., and fish-plates at \$2.60. Track-bolts are higher, say \$3.75 to \$4.25 per 100 lbs.

Steel blooms are quoted at \$45 to \$46 per ton, duty paid, with not many sales reported.

For old iron rails prices are irregular. Probably about \$20 per ton in Philadelphia for tees and \$31 for double-heads are fair quotations.

Blast Furnaces of the United States.

The statement compiled by the *Iron Age* gives the condition of the blast furnaces of the United States on Jan. 1, as follows:

	In blast.	Out of blast.	Not reported.	Total.
Charcoal.....	155	117	4	276
Anthracite.....	169	67	..	236
Bituminous or coke.....	142	78	..	220
Total.....	466	262	4	732

The total weekly capacity of the 466 furnaces in blast is 101,952 tons; that of the 262 furnaces idle is 43,939 tons.

The number of furnaces in blast on Jan. 1 for seven years has been as follows: 1882, 466; 1881, 473; 1880, 384; 1879, 257; 1878, 263; 1877, 244; 1876, 293. Jan. 1, 1882, the number in blast was 63.6 per cent. of the whole number; 1876, only 41.1 per cent.

How the Eagle Spreads his Wings over a Montana Railroad Tunnel.

A correspondent in Montana sends the following, cut from a newspaper, and vouches for the fact that it was actually spoken at a dinner in celebration of the beginning of work on an important railroad tunnel. The newspaper from which it was cut calls it "The Colonel's Peroration."

"Thou everlasting hill, which hast stood here for countless ages of the past, which hast withstood the heats and colds, the storms and tempests of centuries, the lightnings and thunderbolts of heaven! Thou symbol of the immutable and the eternal, in the name of that sublime faculty in man which laughs at impossibilities and aspires to overcome all physical obstacles, we command thee to open before us for this highway of nations. Give thou up the secrets which thou hast kept since the foundation of the world. Let the iron bands which bind people and nations together pass through thee. We will tear thy sides with pick and spade; we will rain upon thy rocks blows of steel heavier than thunderbolts; we will rend them with mightiest explosions; we will drain thy hidden veins by new channels and will let daylight penetrate where only darkness has brooded forever. Thenceforward shall we behold that grand procession which in the dim distance is even now approaching. Daily will it move forward with the speed of the whirlwind and breath of life. Here shall ebb and flow the tide of human life—here our kinsmen from the East, our friends from Europe and strangers from far-off continents shall daily pass through; here the devotees of art, of science, of poetry, of learning, of religion, of business and of pleasure, shall come in a ceaseless tide. Here shall come agriculture with her hands filled with plenty; commerce with the wealth and wares of all nations; invention with its beneficent and undreamed of devices. Here the fruits of California, the teas, the spices and the silks of China shall meet the product of mines which have lain hidden in these mountains for uncounted years. We, whose thoughts are now to be engraved upon these hills, may hope to see them wrought out to a complete and happy realization. Those younger in years to whom will be entrusted the labor of carrying out these plans will be prepared to take the places which are soon to be vacated and to fill with honor to themselves and profit to their employer. When these ideas shall be realized we shall one by one go to other scenes of labor, but we may well hope that while the breezes play about these mountains, while the pines and the firs are green upon their summits and the crystal waters flow down their furrowed sides, the work we this day begin may endure and bless those who come after us until the latest syllable of recorded time."

The Rensselaer Polytechnic Institute Reunion.

The second annual reunion of the graduates of the Rensselaer Polytechnic Institute at Troy was held at the Hoffman House, New York, on the evening of Jan. 17. Mr. B. F. Greene, who was for many years Director of the Institute, presided, and Mr. Charles Macdonald was chairman of the Dinner Committee and Master of Ceremonies. About 80 graduates were present, including several of the older alumni.

After the dinner had been eaten, a letter was read from Mr. W. W. Evans. Mr. Greene and Mr. Le Grand B. Cannon gave some reminiscences of the earlier days of the Institute. Speeches were also made by Mr. Strickland Kneass, Prof. Henry Morton, Messrs. John Bogart, A. P. Boller, R. W. Raymond, Wm. Metcalf and others. The reunion was much enjoyed by those present, among whom were, besides those mentioned above, Messrs. E. N. Horsford, J. P. Wallace, A. R. Fox, G. H. Cook, W. H. Searles, H. Harris, Edward V. C. Lane, A. F. White, F. M. Cleiman, J. C. Platt, Theodore N. Ely, T. H. Aldrich, W. H. Scranton, H. Wilson, R. Van Buren, S. J. Fields, F. L. Buck, S. W. Baker, W. H. Doughty, Joseph M. Wilson, DeVoson Wood, J. A. Wilson, A. M. Lesley, C. Fisher, R. P. Rothwell, J. G. Sanderson, C. C. Martin, H. A. Rowland and T. H. Taylor.

Telegraphing From a Moving Train.

On Sept. 27, through Messrs. Dewey & Co., a patent was issued to a resident of Santa Barbara for a method of telegraphing from a moving railroad car. The invention enables each freight or passenger train to have its own telegraph office. Two wires are required instead of one, and those are suspended directly over the track, and above the moving train. They are parallel, and about eighteen inches apart. One wire is connected with a battery at the terminal station. The other is so suspended that by a somewhat ingenious arrangement light-running wheels can run along them from one end of the road to the other. The wheels are insulated from each other, but are connected with wires that pass down the roof of the car to the operating instrument, and through it complete to the circuit. As the car moves, the wheels are drawn along the wires just above it, and a constant current of electricity is maintained between the initial and terminal stations, through the moving car.

The great value of the invention will be its preservation of life and property by preventing collisions. Almost every day heart-rending accidents are recorded of colliding trains. A lightning express rushes over long stretches of road between stations without knowing what moment it may crash into an approaching train. Upon leaving a station all communication is cut off until it reaches the next station. With offices upon each moving train, and constant, uninterrupted communication, not only with the head office, but with all trains moving on the same track, collisions

would be impossible. The clumsy and expensive machinery of running trains by means of wayside offices would be enhanced 500 per cent. over the present system. When not in use for railroad business the lines can be employed for the transmission of ordinary messages.—*Santa Barbara (Cal.) Press.*

How the Calf Grew.

On one of the railroads running out of Detroit the passenger train made a sudden halt between stations the other day, and an old woman, who was traveling with the usual accompaniment of parcels, whirled herself around and inquired of the passenger behind:

"Have we colluded with anything?"

"I guess not."

"Then what did we stop for?"

"There was a calf on the track, I believe."

That satisfied her for that time, but in half an hour there was another stop to pack a hot journal.

"What on earth is the matter now?" she inquired, as she tried to push up the window.

"Nothing—nothing—only a cow on the track," he replied, as he continued his reading.

The third halt was made just outside of a station for wood, and as she heard the whistle and felt the train slowing down, she got a brace for her feet and called out:

"First calf and then a cow, and now they are going to bump right into a yoke of oxen and string us all to flinders! If they kill me the old man won't settle for less'n \$200 in cash!"—*Detroit Free Press.*

Pennsylvania Railroad Prizes for Track Supervisors.

The official inspection of the Pennsylvania tracks for 1881 with a view to the awarding of \$2,215 in prizes for the best care taken by supervisors and foremen of the portions of track in their charge resulted in the following distributions: C. K. Lawrence, Supervisor Division No. 4, Philadelphia Division, received the General Manager's premium for having the best line and surface between Jersey City and Pittsburgh, \$100; John G. Craig, Supervisor Division No. 1, for the best yard between Philadelphia and Pittsburgh, \$100; G. A. Starkweather, Supervisor Division No. 3, for the best division in his Superintendent's division, \$100; Henry Stoll, foreman Sub-Division No. 4, for the best subdivision between Philadelphia and Pittsburgh, \$75; C. W. Mayer, Supervisor No. 6, for the best division in his Superintendent's (Middle) Division, \$100; and Isaac Good, Supervisor Division No. 12, for the best division on his Superintendent's (Pittsburgh) Division, \$100. Other prizes of \$50 and \$80 were offered, the successful foreman on the Bedford Division being John Maden; the Frederick Division, P. H. Spangler; the Monongahela Division, C. Lindgrist; the Lewistown Division, R. H. Myers; the Tyrone Division, John Downes; the Altoona Division, M. Mulligan, and the West Penn. Division, W. M. Nicholls.

ANNUAL REPORTS.

The following is an index to the annual reports of railroad companies which have been reviewed in previous numbers of the present volume of the *Railroad Gazette*:

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Boston & Lowell.

This company owns a line from Boston to Lowell, 26.75 miles, all double track; a line from Salem by Lowell to Lawrence, 29.75 miles, and five short branches 19.25 miles in all, making 75.75 miles owned. It leases the Middlesex Central road, 10.75 miles; the Nashua & Lowell, 14.50 miles; the Stony Brook road, 13 miles, the Wilton road, 15.50 miles, and the Peterboro road, 10.50 miles, making 140 miles worked. The Nashua & Lowell, with its leased lines, the Stony Brook, the Wilton and the Peterboro roads, was leased from Oct. 1, 1880. The report is for the year ending Sept. 30.

The general account, condensed, is as follows:

Stock.....	\$3,250,000.00	
Installments on new stock.....	451,150.00	
Bonds.....	3,296,400.00	
Notes payable.....	425,000.00	
Accounts and balances.....	9,052.60	
October coupons and January dividend.....	131,789.50	
Nashua & Lowell Co.....	207,325.00	
Contingent fund.....	45,903.51	
Profit and loss.....	515,083.65	
Total.....	\$8,331,654.26	
Road and property.....	\$7,570,791.31	
Other investments.....	104,943.33	
Sinking and insurance funds.....	46,900.14	
Accounts and balances.....	305,132.91	
Materials.....	172,464.61	
Cash.....	131,421.96	
Total.....	\$8,331,654.26	

Bonds were unchanged during the year, but notes payable increased \$104,000. Stock was increased by the installments on new stock. The property investment increased \$607,706.92.

The earnings for the year were as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Passengers.....	\$832,129.84	\$628,465.16	I. \$203,664.68	32.5
Freight.....	988,176.68	716,247.69	I. 271,928.99	37.9
Mail, etc.....	51,265.07	37,256.64	I. 14,008.43	37.8
Total.....	\$1,871,571.59	\$1,381,969.49	I. \$489,602.10	35.4
Expenses.....	1,288,387.00	976,618.15	I. 311,768.85	31.9
Net earn.....	\$583,184.59	\$405,351.34	I. \$177,833.25	43.9
Gross earn. per mile.....	13,368.37	15,976.53	D. 2,608.16	16.3
Net earnings per mile.....	4,165.00	4,086.14	D. 520.54	11.1
Per cent. of expenses.....	68.84	70.67	D. 1.83	...

These earnings were on 140 miles last year, and 86½ miles the preceding year. Expenses include taxes, which were \$73,751.27 last year.

In summing up the various improvements and betterments made during the year, the directors state that 844 tons of steel rails and 68,248 ties have been laid and new equipment to the amount of \$59,860 purchased. At East Cambridge two new lumber sheds have been built, capable of storing 114 cars of lumber, and a new car-house is being erected upon the newly filled land near the end of the passenger bridge across Charles River.

At Mystic, additional pockets capable of storing some 3,000 tons of coal have been constructed, and considerable extensions made to the sidings. The business on this wharf is so rapidly increasing that large expenditures for its accommodation are absolutely demanded, and cannot much longer be delayed. At Arlington new station grounds have been purchased, and it is expected that a new and much needed station will be erected thereon the coming year.

At Lowell the interlocking switch arrangement has been

completed and is now ready for use. A new engine-house capable of storing 28 locomotives is being built in place of the one partially destroyed by fire in June last—the loss of which was fully covered by insurance. Large additions have also been made to the sidings and track room in the yards. Other minor changes at various points are also noted in detail, after which it is stated that the operations of the road for the past year have been unusually free from serious accidents, and the demands of the public for reasonable accommodations have been liberally met.

The income account may be condensed as follows:

Net earnings, as above.....	\$583,184.59
Accumulations of sinking and insurance fund.....	1,085.11
Total.....	\$584,269.70
New equipment.....	\$59,860.00
Rents.....	133,690.85
Interest.....	238,197.58
Dividends, 4 per cent.....	130,000.00
	561,748.43
Surplus for the year.....	\$22,521.27
Surplus Oct. 1, 1880.....	\$580,789.29
Less dividend of Jan., 1881.....	65,000.00
	515,789.29
Total.....	\$538,310.56
Adjustment of Nashua & Lowell claims.....	23,276.91
Surplus, Oct. 1, 1881.....	\$515,033.65

The report says: "A contract has been concluded with the Central Vermont Railroad, covering the business of that and its connecting roads, for one year from Dec. 1, from which a large increase of business is hoped."

"There is no interruption to our friendly business relations with other connecting roads."

"In August last the directors executed a business contract with the Concord Railroad, for five years from Sept. 1, for the management of the two properties upon an agreed division of the net earnings of 40 per cent. to the Concord and 60 per cent. to this corporation."

"This contract is substantially like that which existed for more than 20 years between the Boston & Lowell and the Nashua & Lowell railroads, with so much benefit to both the stockholders and the public. The experience of the past three months has proved that this contract and the operations under it are not only fair and equitable to the corporations directly interested, but, that the public can thereby be vastly better served at much less expense. Under this contract Mr. Henry C. Sherburne has been appointed General Manager, and Mr. Charles E. A. Bartlett Cashier of each of the corporations."

"The income of all roads constituting parts of lines extending to the West, have been seriously reduced the past year by the ruinous competition between the great trunk corporations. Over this competition, and the low rates occasioned thereby, this road and the other smaller roads connecting with it and forming part of the through line, have, of necessity, very slight control. They have all suffered in proportion to their mileage; for the alternative presented to them, in common with other roads, was, to take the business at existing rates or lose it both for the present and the future."

"We hope that arrangements may soon be made by which this great mass of business, from which the past year we have received but little profit, will add materially to our income."

Fitchburg.

This company worked the following lines during the year ending Sept. 30, 1881:

	Miles.
Main Line, Boston to Fitchburg, double track.....	50.68
Watertown Branch, Junction to Waltham.....	6.00
Lancaster & Sterling Branch, South Acton to Marlboro.....	12.42
Peterboro & Shirley Branch, Ayer Junction, Mass., to Mason Village, N. H.....	23.62
Total owned.....	93.32
Vermont & Massachusetts, leased:	
Main Line, Fitchburg to Greenfield.....	56.00
Branch, Greenfield to Turner's Falls.....	2.80
Total.....	58.80
Total owned and leased.....	152.12

The company also runs trains over the Troy & Greenfield Railroad, 37 miles, paying tolls to the state of Massachusetts for its use; this makes the main line 143.68 miles long, from Boston to North Adams. On the road owned there are 50.68 miles of second track and 62.94 miles of siding; on the road leased 22.06 miles second track and 29.53 miles of sidings. The use of 10.5 miles of track, from Fitchburg to South Ashburnham, is leased to the Cheshire Railroad. The total mileage of track on the lines worked is 317.33 miles. Additions during the year were 9.19 miles of sidings on the line owned, 11.67 miles of second track and 4.18 miles of sidings on the leased line.

The equipment consists of 91 engines and 93 tenders; 91 passenger and 27 mail and baggage cars; 2,243 box, 816 flat and 26 caboose cars; 197 gravel and other cars, and 9 snow-plows. Additions during the year were 10 engines and tenders; 1 passenger and 2 baggage cars; 372 box, 175 flat and 6 caboose cars; 71 gravel and other cars.

The general account is as follows:

Stock.....	\$4,950,000.00
Funded debt.....	2,000,000.00
Notes payable.....	1,134,500.00
Vermont & Mass. R. R. Co.....	760,444.53
Accounts and balances, interest, etc.....	138,096.56
Profit and loss.....	426,909.09
Total.....	\$9,410,350.18
Construction and property.....	\$7,076,565.27
Vermont & Mass. improvements.....	1,185,658.29
Hoosac Tunnel Dock & Elevator Co.....	280,500.00
Sinking fund.....	186,553.78
Debit balances.....	11,982.00
Materials.....	521,993.09
Cash and cash funds.....	147,097.75
Total.....	\$9,410,350.18

During the year there was an increase of \$450,000 in stock, \$500,000 in bonds and \$728,000 in bills payable. Cost of property increased \$653,688.45, and improvements of leased line \$371,080.76.

The earnings for the year were as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Passengers.....	\$780,055.13	\$749,169.66	I. \$30,885.47	4.1
Freight.....	1,658,139.26	1,496,459.11	I. 161,680.15	10.8
Mail and Ex.....	67,270.84	60,490.88	I. 6,779.96	11.2
Rents, etc.....	150,364.33	158,479.32	D. 8,114.99	5.1
Total.....	\$2,655,829.56	\$2,464,598.97	I. \$191,230.59	7.8
Expenses.....	2,127,437.50	1,725,535.09	I. 401,902.41	23.4
Net earn.....	\$528,392.06	\$739,063.88	D. \$210,671.82	28.5
Gross earn. per mile.....	17,458.78	16,201.68	I. 1,257.10	7.8
Net earn. per mile.....	3,473.52	4,858.43	D. 1,384.91	28.5
Per cent. of exps.....	80.10	70.01	I. 10.09	...

The report says: "This large increase of expenditures

ALABAMA MINOR RAILROADS IN 1880-81.

NAME OF ROAD.	PROPERTY.				CAPITAL.			Train mileage	EARNINGS.					Interest on bonds and dividends
	Miles owned	Miles leased	Locomotives	Pass. train cars	Stock	Bonds	Other debt		Gross earnings	Expenses	Net earnings	Gross earnings per mile	Net earnings per mile	
Alabama Great Southern	290	5	26	23	596	\$8,613,000	1,950,000	527,438	701,019	45,799	241,230	2.376	\$18	66
Columbus & Western	60	1	1	1	17	200,000	677,000	44,200	44,200	31,332	12,868	737	214	71
East Alabama	25	1	1	1	1	200,000	1,500,000	42,558	42,558	20,929	21,845	1,702	860	49
Montgomery & Eufaula	80	1	1	1	1	500,000	.....	381,122	381,122	220,873	153,249	4,780	1,016	60
Selma & Greensboro	44	10	3	3	4	.....	.....	88,467	88,467	71,151	17,316	1,639	321	80
Tuskegee	5	1	1	1	1	.....	.....	8,635	8,635	6,952	1,683	1,727	337	81
Vicksburg & Brunswick	21	1	1	1	1	80,000	.....	13,946	35,376	21,226	14,150	1,685	674	60
Western	112	1	1	1	1	2,553,000	1,242,012	254,476	690,694	339,549	315,145	4,069	2,069	49

* Of this there is \$783,000 preferred stock.

† No stock; owned jointly by Central of Georgia and Georgia companies.

† Dividend of 2½ per cent. on stock.

† Cost of property, \$53,036; 3 ft gauge.

The figures above are from statements in the Alabama Railroad Commissioners' report for the year ending June 30, 1881; they include all roads which do not otherwise report or are not included in lessees' returns.

and decrease of net earnings has been occasioned principally by the exceptionally severe weather of last winter, by the need of proper terminal facilities both at Boston and North Adams, and because for a large portion of the year we have been compelled to transport all through freight and passengers at less than actual cost.

"Many of the causes which have operated to our disadvantage will soon cease to exist. The second track upon our road is already completed, with the exception of about 23.49 miles, and the grading has been done on about one-half of this unfinished part, and, if necessary, the whole work can be finished next year. On the Troy & Greenfield Railroad, between Greenfield and North Adams, a portion of the second track has been laid, and they will undoubtedly proceed with it next year. The terminal facilities at North Adams are being considerably enlarged and improved by the state. At Boston the elevator and docks connected with our road will soon be ready for use, and so much of our Miller's River freight yard is finished as to greatly increase our facilities for storing cars.

"When freight rates shall be restored to a basis on which profits can be realized, is a question which can be settled only by the managers of the great trunk lines. We trust this important matter will shortly be arranged, and that soon after the close of lake and canal navigation the present senseless and ruinous war of rates will end. * * *

"The passengers carried over the Troy & Greenfield Railroad have increased from 114,664 in 1880, to 119,526 in 1881; and the tolls paid the commonwealth for passengers, expresses and mail have decreased from \$46,154.69 in 1880, to \$45,857.16 in 1881.

"The freight over the same road has increased from 751,451 tons in 1880, to 910,951 tons in 1881; and the tolls paid therefor have increased from \$131,782.95 in 1880, to \$140,835.84 in 1881.

"The tolls paid the commonwealth on freight and passenger business have increased from \$177,937.64 in 1880, to \$186,693 in 1881, or \$8,755.36.

"The above payments have been made in accordance with our contract with the state; but in February next they will be revised by the Railroad Commissioners, acting as auditors, and permanently adjusted for the year."

The traffic for the year was as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Train miles	1880-81.	1879-80.		
Passenger	860,829	748,134	I.	112.695
Freight	957,422	811,085	I.	146.337
Service and switching	497,795	325,552	I.	168.243
Total	2,312,046	1,884,771	I.	427.275
Passengers carried	2,657,984	2,461,603	I.	106.381
Passenger miles	42,854,447	39,752,302	I.	3,101.745
Tons freight carried	1,776,060	1,546,950	I.	230.010
Ton miles	109,323,290	.....	
Average train load:				
Passengers, No.	49.78	53.14	D.	3.36
Freight, tons	134.78	.....	

Of the passenger miles 24.9 per cent. was of business and from other roads. The earnings per train mile were \$1.15; expenses, \$1.08.

Payments from net earnings were as follows:

Net earnings, as above	\$528,392.06
Rents	\$237,811.50
Interest on bonds	115,000.00
Interest, other	25,180.13
	377,991.63
Net balance	\$150,400.43

One dividend of 3 per cent. was paid during the year, and another declared since its close.

"During the year 2,696 tons steel rails, 952 tons iron rails and 88,232 new ties were used in renewals. A number of new buildings were put up. Work on the second track and on improvements of grades and alignment at several points were continued. These changes and a change in the course of Miller's River will do away with eight bridges now in use. Arrangements have been made to replace the grade crossing of the New London Northern at Miller's Falls, and 12 highway grade crossings have been changed to over or under crossings.

The report says: "The road-bed and track are in excellent condition; all the track between Boston and Greenfield, except about 30 miles, being laid with steel rails.

"The Hoosac Tunnel Dock & Elevator Company, which will be ready for business early next year, have taken possession of all the property authorized by their act of incorporation, except Caswell's Wharf, and have purchased the wharf of the Tudor heirs, which was not included in its grant by the Legislature.

"The Fitchburg Railroad Company have subscribed \$374,000 of the stock, and have paid in \$290,500 on account of the same. An elevator of about 550,000 bushels capacity is now nearly completed, and will be ready for use in February next. The Dock & Elevator Company have reserved sufficient ground-room just east of the elevator, on which to build an addition, and increase the capacity to 1,000,000 bushels whenever necessary. The machinery already put in will be sufficient for the enlarged capacity.

"The wharves and docks of said company have been so re-arranged, that, when completed, there will be four docks, each 500 ft long, and of widths from 100 to 149 ft, besides a shorter dock between its property and the Tudor Company's wharf. There will also be four piers of different widths, on which three extensive two-story warehouses will be built, to be used for the transfer of merchandise between the steamers and the piers, and for the storage of free and bonded goods. There will be, when all the changes are made, room in the main docks for four large ocean steamers;

also room for smaller steamers and sailing-vessels in the shorter dock and end berths.

"At the head of the piers the Fitchburg Railroad Company holds its location, on which is now laid a double track, connecting its main tracks and Charlestown freight-yard with this property and the Navy Yard.

"From lack of proper dock and elevator facilities we have labored under great disadvantages, and have been put to much annoyance and extraordinary expense in handling our freight for export. This expense has been such as to materially affect our earnings.

"The facilities furnished by the Dock & Elevator Company supply a much-needed improvement, and will enable us to do the export business with greater economy and dispatch.

"We have continued filling the land and flats purchased of the Massachusetts General Hospital and others, until about one-half has been filled in, and nearly covered with tracks for the storage of freight-cars.

"We have purchased of the Tudor heirs the first wharf west of Hittinger's, and sold it and Hittinger's Wharf to the Hoosac Tunnel Dock & Elevator Company.

"For providing more room at Boston we have purchased of the commonwealth an area of 60,872 square feet of flats, lying between our wharf on Charles River in Charlestown, and the harbor-line west of Warren Bridge. This area has been covered by a substantial pile-wharf, on which have been laid tracks and several drive-ways to accommodate the bulk-freight business.

"For the same purpose we have agreed to purchase from the commonwealth 59,722 square feet of land inside the enclosure of the old State Prison, and adjoining the location of the Boston & Maine Railroad and Austin street in Charlestown.

"The bridge authorized by the act of 1880 to connect our Miller's River freight-yard with Prison Point Bridge, has been built, and is now in use. * * *

"We have expended for permanent additions and improvement on the Fitchburg Railroad, \$212,805.95; on the Vermont & Massachusetts Railroad, \$371,080.76; for stock of the Hoosac Tunnel Dock & Elevator Company, \$280,500; and for new equipment, \$498,705, making a total of \$1,363,091.71.

"A railroad is never finished; but we believe we have already provided nearly all the equipment and terminal facilities necessary for many years. Our chief expenditures for the next few years, so far as we can see, will be for new shops, engine-houses, the completion of the Miller's River freight-yard, and the completion of the second track on the Vermont & Massachusetts Railroad."

St. Louis & San Francisco.

This company makes the following brief statement for the year ending Dec. 31, the December expenses partly estimated.

The earnings for the year were as follows:

	1881.	1880.	Increase.	P. c.
Gross earnings	\$3,155,300	\$2,698,371	\$456,929	16.9
Expenses	1,602,003	1,325,129	276,874	21.2
Net earnings	\$1,553,297	\$1,373,242	\$180,055	13.1
Per cent. of exps.	50.78	49.13	1.65	.....

Expenses include all taxes and renewals and some improvements of road. Taxes in 1881 were \$79,096, nearly double those of 1880, and the improvement account was \$155,742, a considerable increase.

The charges on net earnings were as follows:

Net earnings, as above	\$1,553,297
Interest charges	\$950,100
Dividends on first-preferred stock, 7 per cent.	289,443
	1,239,543

Balance not divided

\$313,754

The interest charge was \$86,200 greater than in 1880. Two dividends were paid on the first-preferred stock, only one having been paid in 1880.

The surplus not divided amounts to a little over 3 per cent. on the second-preferred stock.

Mississippi & Tennessee.

This company owns a line from Memphis, Tenn., to Grenada, Miss., 100 miles. Its report is for the year ending Sept. 30.

The earnings for the year were as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Passengers	\$121,406	\$127,531	D.	\$6,125
Freight	359,587	387,306	D.	27,725
Mail, etc.	11,199	10,652	I.	547
Total	\$492,186	\$525,489	D.	\$33,303
Expenses	297,840	256,109	I.	41,731
Net earnings	\$194,346	\$269,380	D.	\$75,034
Gross earn. per mile	4.922	5.255	D.	333
Net	1.943	2.094	D.	751
Per cent. of expenses	60.52	48.50	I.	12.02

The disposition of net earnings was as follows:

Net earnings, as above	\$194,346
Interest	\$151,749
Legal expenses, insurance, etc.	21,363
	173,112
Balance	\$21,234

The balance was applied on the cost of changing the gauge, and for new machinery and cars.

The change of gauge of the road from 5 ft. to 4 ft. 8½ in. made during the year, and the consequent change of all

locomotive engines and tenders and passenger, baggage, freight and all other cars, together with other extraordinary outlays the past year charged to operating expenses, have aggregated the sum of \$67,067.

Delaware Western.

This company owns a line from Wilmington, Del., to Landenberg, Pa., 20 miles. The following statements for the year ending Dec. 31 are from the report presented at the recent annual meeting.

The earnings for the year were as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Freight	\$37,016.84	\$42,200.13	D.	\$5,243.29
Passengers	12,953.19	12,406.28	I.	546.91
Mail, etc.	2,326.19	4,519.94	D.	2,193.75
Total	\$52,296.22	\$59,126.35	D.	\$6,890.13
Expenses	43,363.11	53,068.22	D.	9,703.11
Net earnings	\$8,933.11	\$6,118.13	I.	\$2,812.98
Gross earn. per mile	2,614.81	2,959.32	D.	344.51
Net	446.55	305.91	I.	140.64
Per cent. of exps.	82.92	89.64	D.	6.72

The good condition of the road and equipment has been fully maintained during the year, and the road operated without serious loss or accident.

The controlling interest in the road is now owned by the Baltimore & Ohio Company.

Lehigh Valley.

The following statements are from the President's report for the year ending Nov. 30, presented at the annual meeting in Philadelphia, Jan. 17.

At the close of the fiscal year the capital account was as follows:

Preferred stock	\$106,300
Common stock, including scrip not yet converted	27,496,895
Total stock	\$27,603,195
First-mortgage, 6 per cent. bonds (coupon and registered), due in 1898	5,000,000
Second-mortgage, 7 per cent. bonds, registered, due 1910	6,000,000
Consolidated mortgage 6 per cent. bonds, due in 1923, except sterling bonds	.....
Sterling	\$4,163,000
Coupon	2,000,000
Registered	7,500,000
Annuity	500,000
	14,163,000
	\$52,766,195

In addition to the above there are outstanding \$2,500,000 of the 5 per cent. bonds of the Easton & Amboy Railroad Company due in 1920, the interest upon which is charged to our accounts.

One hundred and fifty of the sterling bonds were drawn, payable Dec. 1, 1881, leaving \$4,013,000 bearing interest from that date.

There is no floating debt. Changes during the year were a decrease of \$141,000 consolidated bonds, and an increase of \$400,000 in the Easton & Amboy bonds.

The coal traffic for the year was as follows:

	1881.	1880.	Increase.	P. c.
Anthracite	5,791,376	4,606,415	1,184,965	25.8
Bituminous	79,325	65,306	14,019	21.5
Total	5,870,701	4,671,721	1,198,980	25.7

The above statement for the past year does not include 393,976 tons of anthracite coal and 372,647 tons bituminous coal, which passed over the Pennsylvania & New York Railroad, but not over any part of the Lehigh Valley Railroad proper, thus making the total coal tonnage of the two roads for 1881, 6,637,324 tons.

The company's income from all sources and the expenses of the road were as follows:

	1881.	1880.	Increase.	P. c.
Income from all sources	\$10,392,126	\$8,600,934	\$1,791,192	20.8
Expenses of the road	4,648,083	4,002,357	645,726	16.1
Net earnings	\$5,744,043	\$4,598,577	\$1,145,466	24.9
Net earnings for the year	.....	.....	\$5,744,043	.....
Interest on bonds	.....	.....	\$2,268,314	.....
Dividends	.....	.....	1,522,954	.....
Interest, taxes, loss on Morris Canal, etc.	.....	.....	772,682	.....
Charged for estimated accumulated depreciations	.....	.....	1,070,050	.....
	.....	.....	5,634,000	.....
Balance to profit and loss	.....	.....	\$110,043	.....

Interest on bonds includes the interest due Dec. 1. Dividends were 10 per cent. on preferred stock and 5½ per cent. on common stock.

The President's report says: "We have sold to the Pennsylvania & New York Canal & Railroad Company a proportional amount of our investment in the stock of the Geneva, Ithaca & Sayre Railroad Company which was purchased some years ago for our joint benefit.

"The severe competition in freights from the West participated in by all the trunk lines has very seriously interfered with our income from that source. If good rates had been obtained on the portion carried by us, our freight receipts would have been much larger than they now appear.

"Our various interests have also united in establishing a transportation line on the lakes, between Buffalo and Chicago. Two vessels are now owned by us, and negotiations are in progress to secure four others. It is thought that this enterprise is quite an important one, and will be of great advantage to us in connection with our railroad lines."



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EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

SMARTNESS.

About a year ago an officer or agent of one of the railroads sought to distinguish himself by some very large and very smart operations to secure traffic for his line. He must have had extraordinary talent of his peculiar kind, which is the kind developed by the unrestricted competition of railroads, and necessarily in great demand and highly rewarded when there is such competition. In this case part of companies interested had agreed to divide the traffic, and all, including this agent's own, had pledged themselves to maintain rates strictly at certain figures. But this man desired to demonstrate his capacity by largely increasing the business over his own road, which under the circumstances was an extremely difficult task, for nearly all the other roads and agents were interested in maintaining rates and preventing an unusual distribution of traffic among the railroads. It was unusually important to cover up any underhand contracts with and concessions to shippers, for his company was a party to the agreement to maintain rates, and was very much interested in having competing lines do so; but it was unusually difficult to be secret; for there was not the usual looseness in making rates or contracts, when it is not easy to find who is responsible for an irregularity, but companies generally were holding their agents to a strict accountability.

In spite of this our smart agent succeeded in some way in making contracts by which millions of bushels of grain, and much other traffic, were diverted from their usual route to his own line, which for some time had an immensely greater traffic from some Western cities than ever before. Yet so skillfully was the business managed that it was long after the diversion began that the responsibility for it could be traced—and in fact we do not know that any one can now say positively just how and where it was done.

The apparent result of this smartness at the time was, let us say (quantities assumed) an absolute increase of 200,000 tons in the traffic of the line, the profit on which, at full rates, would have been, perhaps, \$700,000; but as concessions in the rates were made in order to secure the traffic, the actual profit on it was probably about \$500,000.

Half a million dollars added to the net profits of a line of railroad (not all owned by one company) seemed a brilliant result for a winter's campaign. The agent had demonstrated his remarkable ability, showed that he could earn his salary, and qualified himself for promotion.

So it may have seemed then. Nothing smarter in the way of securing traffic had ever been done. It was one of the events of the railroad world.

This, however, was not the end of it. One line had gained and was triumphant, but another line had lost, and was by no means inclined to be submissive.

After various secret operations to restore the old division of traffic (all of which cost money to all parties), the contest culminated in an open reduction of rates about the middle of June to a basis of 15 cents per 100 lbs. less from Chicago to New York than was made at the opening of navigation, and than the summer rate of the previous year—making the rate on through freight 50 per cent. less for flour and grain, and more than 40 per cent. less on the great bulk of other freight from such places as Chicago, St. Louis, Peoria and Milwaukee, with similar, though not so great, reductions from competing points further east. The reduction from \$6 to \$3 per ton is 50 per cent. in gross receipts, but in profits it is of course much greater. The average cost of carrying from Chicago to New York is more than \$3, but of course the through freight costs less than the average, and many of the elements of cost would be reduced but little or not at all if no through freight were carried. Three dollars a ton, however, on shipments from Chicago alone, calculated on the traffic of 1880, when rates were maintained (and so not increased, as in 1881, by low rates), amounts to more than \$3,500,000 for the last 6½ months of the year; and much more than half this time the rates were not \$3 per ton, but \$3.50, \$4, and sometimes even \$5 per ton less than at the corresponding time in 1880; while the Chicago shipments, while much larger than those from any other place, are still not one-third of the through freight carried east by the trunk lines, which must have been as much as 5,000,000 tons in the last 6½ months of 1880; and though much of this came from points further east than Chicago, from which the reduction of rates was not so great in amount, yet the reduction in the share of the trunk lines was in many cases as great as on Chicago shipments. In the first two months of the railroad war the indisputable reports of the roads to their joint office in New York showed that the receipts from through freight of all the roads which carry on the basis of the Chicago-New York rate (including shipments from the Mississippi from St. Louis to Rock Island and from Chicago and Milwaukee to the East) were just about \$2,000,000 a month less than in 1880, the amount of traffic having been nearly the same, so that it was wholly due to the lower rates. Later in the year the decrease in through earnings must have been about as great, and at this rate there was a decrease of \$13,000,000 not only in receipts but in profits from east-bound freight during the railroad war, about half of which probably fell upon the five trunk lines east of Buffalo, Pittsburgh, etc. It is true that this loss was not wholly due to the railroad war. In the last four months of the year the railroads, owing to a lighter grain movement, would have carried much less traffic if they had charged the rates of the year before; but we can allow a large deduction from the \$13,000,000, and still have enough to point the moral of this tale.

But this is not all. About six weeks after the breaking out of the war on east-bound freight, rates were reduced nearly one-half and long contracts made on west-bound freight, the amount of which is much smaller, but the rates much higher. This reduction of west-bound rates applied to the traffic of the last five months of 1880 amounts to more than \$3,200,000. There would certainly have been more carried in 1881 than in 1880, even if rates had been maintained. Actually a great deal more was carried, and much of this was doubtless due to the lower rates (which took business from the canal, etc.), and we shall have to make some deduction from the \$3,200,000 to ascertain the actual reduction of profits on this traffic by reason of the reduction in rates.

If, however, we take only half of the \$16,000,000 apparent losses by the freight war as the actual loss, the \$8,000,000 remains a sufficiently formidable fine as the reward of the smartness of one "enterprising" railroad man exercised during a few days or weeks about a year ago. The share of the loss which fell to his own company could not easily have been less than a million dollars, and the half million dollars placed to his credit in May must now be replaced by an equal amount to his debit—and this when we have made enormous allowances for the effect of the low rates in increasing traffic, and no allowances at all for the cost of carrying a larger traffic than in 1880, and also without charging any of the losses of the passenger war to this account; though it is not probable that the passenger war (though having a cause of its own) would have been permitted to go to such extremes or last so long had it not been that the companies were so embroiled in the freight war. We have included the losses by the low west-bound rates, because there was no other cause for these than the quarrel over east-bound traffic.

Further, we have included losses only till the end of 1881. More than half a month of 1882 has passed, and

rates meanwhile have been on the average lower than at any time before, and contracts for six months are said to have been made with large shippers for west-bound freight at rates not one-half but fully two-thirds lower than those of last year—which it would be perfectly easy to obtain now on a larger traffic even than last year. There are negotiations for peace, it is true, and there is a fair prospect that they may be successful; but in this winter season, when railroad traffic is large and rates usually high, and when the canal takes no traffic, the losses by the current through rates must be as much as \$2,000,000 a month, making allowances for any increase in shipments (which in existing circumstances, when shipments are chiefly for domestic consumption, should not be large); and a few weeks even of this has a serious effect. At all events, the fine for this remarkable display of smartness was not fully paid in 1881, but is being paid daily still.

But again, the railroads were not the sole sufferers by the railroad war. The grain traffic of the Erie Canal was reduced nearly one-half, and the canal rates were made on the average one-third lower for the whole season, and their earnings from grain were reduced from about \$4,700,000 in 1881 to about \$1,900,000, and the revenues of the canals from tolls were so seriously reduced that they will not be sufficient to maintain it next year. And the traffic and rates of the vast fleet on the great lakes were also seriously reduced—all in consequence of the smartness of one man, who, it is reported, did not have the authority of his own company even to exercise his talent as he did.

It may be said that it was not at all necessary that a railroad war, long or short, should follow the diversions of traffic through special contracts last winter and spring; that even the temporary losses by those diversions could have been made up by an agreement which the offending line was perfectly willing to enter, and that therefore the railroad war is properly chargeable upon the party that openly declared it in June. All this we believe to be true. We do not think that the occasion of the contest was a justifiable cause of railroad war. All the same it was and ought to have been foreseen to be a very probable cause of war.

We must take men as they are and railroad companies as they are, and all experience has shown that such successful smartness as was exercised last winter is very likely indeed to be followed by a railroad war, though the war may be the cause of much greater losses to the offended declaring the war than to the offender who deprecates it, and of greater ones still to many who have no grievance whatever, and who are in no way connected with the act which resulted in the contest.

It is needless to point out that as this disastrous conflict was the result of an abuse of the rate-making power, it emphasizes the importance of closely restricting the authority for making such rates to a single and responsible head or department. Intrusting an indefinite number of agents with authority to make concessions and contracts for rebates is about as prudent as to give each of a gang of quarrymen a can of nitro-glycerine to use according to his judgment or his lack of it.

But so long as numerous agents and officials do have power to exercise their discretion in making rates (and if the representatives of one company have such power, all others competing for the same traffic must have it), they will do well to bear in mind that it is quite possible to be too smart, and to read over frequently the history of the great freight war of 1881-2 in order to impress this lesson on their minds.

SPUYTEN DUYVIL ACCIDENT.

Before this number of the *Railroad Gazette* reaches its readers they will have learned from the daily papers the details of the late lamentable accident which happened near Spuyten Duyvil Junction on the New York Central & Hudson River Railroad on the evening of Jan. 13. The location of the road at the place where the accident occurred is shown by the diagram, which, although not drawn from measurements of the ground, was made from observations taken on the scene of the accident.

Spuyten Duyvil Junction is on the Hudson River just opposite the extreme western limit of Manhattan Island, from which it is separated by the Harlem River, at this point a narrow tidal stream. The main line of the Hudson River Railroad runs nearly north and south on the banks of that stream, with one branch continuing from the junction southward to Thirtieth street station, on the west side of the city, and another, on which the accident happened, and which has many very sharp curves, running in an

easterly direction to the Harlem Railroad, and over that line to the Grand Central station, which is a mile further east than the Thirtieth street station.

The train that was injured was the south-bound Atlantic express, which left Albany at 3:20 p. m., nearly three-quarters of an hour late. On passing Spuyten Duyvil, the engineer slowed down, and after passing

The rear brakeman in this case was George Melius, who says that he went back seven or eight car lengths, which would be from 350 to 450 feet. Several persons, it is reported, say that they saw him standing not more than one hundred feet, if so far, from the rear end of the train. The latter probably is the true statement. From the diagram it will be seen that, owing to the sharp curve, the engineer of the Tarrytown train could not without looking out on the fireman's side have seen a signal at this place until he came very near to it, as the line curved to the left, while he was on the right side of the engine, with his view obstructed by the dome, sand-box and smoke-stack.

His train consisted of three light cars which were equipped with the Westinghouse brake. His locomotive also had driving-wheel brakes, which he said he applied with full force, then reversed his engine, and heroically remained at his post, shielding himself from the crash by getting down behind the boiler. Probably the destructive effect of the collision was very much lessened, although not prevented, by the Westinghouse brake on this train.

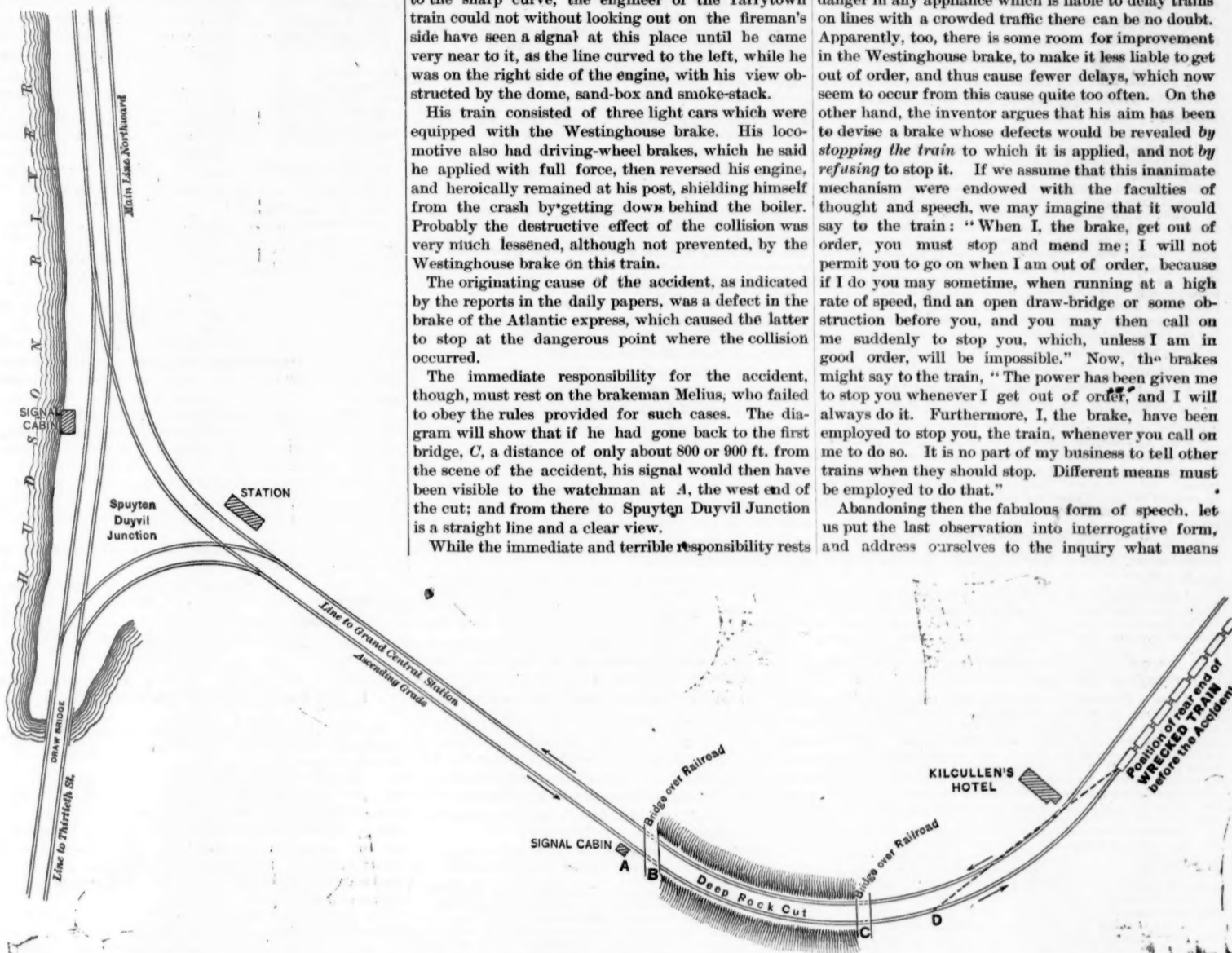
The originating cause of the accident, as indicated by the reports in the daily papers, was a defect in the brake of the Atlantic express, which caused the latter to stop at the dangerous point where the collision occurred.

The immediate responsibility for the accident, though, must rest on the brakeman Melius, who failed to obey the rules provided for such cases. The diagram will show that if he had gone back to the first bridge, C, a distance of only about 800 or 900 ft. from the scene of the accident, his signal would then have been visible to the watchman at A, the west end of the cut; and from there to Spuyten Duyvil Junction is a straight line and a clear view.

While the immediate and terrible responsibility rests

gers of the New York Central refused or failed to do so, and that, at various times, attention was called in these columns to their neglect in adopting this safety appliance, the merits of which were then well recognized. In view of this, the fact that the late accident was in a measure caused by the Westinghouse brake cannot be ignored, and that there is an element of danger in any appliance which is liable to delay trains on lines with a crowded traffic there can be no doubt. Apparently, too, there is some room for improvement in the Westinghouse brake, to make it less liable to get out of order, and thus cause fewer delays, which now seem to occur from this cause quite too often. On the other hand, the inventor argues that his aim has been to devise a brake whose defects would be revealed by stopping the train to which it is applied, and not by refusing to stop it. If we assume that this inanimate mechanism were endowed with the faculties of thought and speech, we may imagine that it would say to the train: "When I, the brake, get out of order, you must stop and mend me; I will not permit you to go on when I am out of order, because if I do you may sometime, when running at a high rate of speed, find an open draw-bridge or some obstruction before you, and you may then call on me suddenly to stop you, which, unless I am in good order, will be impossible." Now, the brakes might say to the train, "The power has been given me to stop you whenever I get out of order, and I will always do it. Furthermore, I, the brake, have been employed to stop you, the train, whenever you call on me to do so. It is no part of my business to tell other trains when they should stop. Different means must be employed to do that."

Abandoning then the fabulous form of speech, let us put the last observation into interrogative form, and address ourselves to the inquiry what means



LOCATION OF SPUYTEN DUYVIL ACCIDENT.

it about a half mile the train suddenly came to a stop, it is said because there was something wrong with the Westinghouse air-brakes, which "went on" and could not be released. The delay was from five to ten minutes, when the Tarrytown local train, which was following, ran into the rear end of the Atlantic express. The last two cars took fire, and eight persons were either crushed or burned to death, and about double that number more or less injured.

An accident of this kind, occurring on one of the principal lines of our country, which is owned by one of the richest railroad companies in the land, and happening within the corporate limits of New York city, very naturally excites some indignation, and has led the public to inquire, very earnestly, where the responsibility for the disaster should be fixed.

It is not necessary to inform railroad men that a train which stops at an unusual place on the line is liable to be run into by another following. Now, what has the New York Central & Hudson River Railroad Company done to prevent such accidents? The following are the rules on this line governing such cases:

"53. Whenever a train is stopped on the road, or is only enabled to proceed at a slow rate, the conductor must immediately send a man with a red signal at least half a mile back on double track, and the same distance in both directions, if on single track, to stop any approaching train, which signal must be shown while the detention continues. This must always be done, whether another train is expected or not. In carrying out this instruction the utmost promptness is necessary; not a moment must be lost in inquiry as to the cause of stoppage or its probable duration; the rear brakeman or trainman must go back instantly. Conductors will be held strictly responsible for the prompt enforcement of this rule."

"54. The signalman sent back must not return to the train on the blowing of the whistle to start, nor unless sent for by the conductor, and then must first place two torpedoes upon the rail.

* NOTE.—The italics are ours.

upon Melius, it is hard to see, though, how conductor Hanford of the Atlantic express can escape sharing, in a very considerable measure, the accountability. The rules say "the conductor must immediately send a man," and again, to leave no doubt about their duty in such cases, "conductors will be held strictly responsible for the prompt enforcement of this rule." The *Herald* reports that Hanford said: "After my train stopped I saw my signalman moving with his signals in hand. How far back he went I am unable to say, but I immediately went ahead to ascertain the cause of the stoppage, and found that the air-brakes had been applied to the train." The position of his train was an especially dangerous one, owing to the location of the line, as indicated in the diagram. He knew, or should have known, that the Tarrytown train was due in a few minutes, and therefore it was his manifest first duty to see that the rear of his train was protected, and not to assume that somebody else had done so. The amount of human woe which has resulted from persons assuming that something has been done, which others have neglected to do, is incalculable. General Burnside lost the battle of Fredericksburg and wasted thousands of lives uselessly, by assuming that someone else had provided, or would provide, pontoon bridges for crossing the Rappahannock, which was not done. Napoleon, it is said, lost the battle of Waterloo through a blunder of a similar kind. In the condition of things which existed where the accident we are discussing occurred, no conductor should assume that the safety of his train has been assured by some one else. It was his manifest first duty to see that it was done. But, while this was true, the responsibility does not end here, as we shall try to show further on.

Some of the readers of the *Railroad Gazette* may remember that, for some years after other lines had adopted the Westinghouse automatic brake, the mana-

should be employed on lines like the New York Central Railroad, having a heavy traffic, "to tell trains when to stop" under circumstances like those which existed last Friday, just before the accident near Spuyten Duyvil occurred.

The rules on that line, which are very similar to those in force on other roads for meeting such emergencies, have been given above. The experience, we think, of nearly all railroad superintendents will sustain the assertion that it is practically impossible to have that rule obeyed with any reasonable degree of certainty. As a person not unobservant of such matters remarked, since the Spuyten Duyvil accident occurred, "if men were placed on the rear platforms of all trains with double-barreled shot guns and ordered to shoot all brakemen who failed to obey the order, there probably would soon be an increased mortality among brakemen." A railroad manager of many years' experience related the case of a brakeman who was sent out to protect the rear end of a delayed freight train from another following. He soon grew tired of his monotonous duty, abandoned his post, and came into the caboose, lay down and went to sleep, and was killed by the train which he should have stopped, which ran into the one on which he was employed. The morning paper of the day on which we write, Jan. 18, contains an account of a collision which happened the day before, on the Lehigh Valley Railroad, and the account winds up by saying: "The accident occurred through the rear brakeman of the freight train neglecting to signal in season the approaching train." An almost unlimited amount of testimony could be collected in evidence of the above assertion. The early British Board of Trade reports on railway accidents are an almost constant running commentary on the difficulty of securing safety by such means, and on the necessity of employing some other system to

prevent collisions of trains running in the same direction. This becomes the more striking if we take the reports on accidents which occurred 25 or 30 years ago, before the block system had been generally introduced on British roads; and at the risk of making the remainder of this article a series of quotations from these reports, we give the following extracts from them, and will add that a sufficient amount of similar testimony could be gathered from the published reports, from 1853 to the present time, to fill at least this number of the *Railroad Gazette* and probably several others.

In reporting on a collision caused by an engine running into the rear of a cattle train on the London & Northwestern Railway on Sept. 8, 1853, Captain Galton said:

"The most efficient mode of securing an interval between trains, and of doing away with any possibility of collisions to trains when between stations, is to divide the railway into portions, and not allow a train to enter upon a portion until the preceding train shall have left that portion. The length of these portions would be regulated by the amount of traffic. This mode of working could be effected by means of the electric telegraph-instruments being placed at each station, or, if the stations were far distant, at intermediate places. It would probably be necessary for special wires to be appropriated for the purpose. I am of opinion that this mode of working the railway is deserving of the serious consideration of the directors, and that (if not considered desirable for the whole line) it might, at least, be introduced on those parts which are most exposed to danger, from being on inclines or otherwise."

Then, as now, the introduction of safety appliances was resisted by the directors of railroads, and when the above recommendation was brought to the notice of the directors of the Midland Railway, they sent the following remarkable objections to adopting them:

"With reference to the electric telegraph, the directors quite concur in the opinion that a systematic working of all trains by telegraph would be desirable if it could be accomplished; but they repeat their opinion, that the telegraph as at present arranged does not admit of being worked with such certainty as to be depended upon for purposes of safety."

In his report on a collision which occurred on the Southeastern Railway March 4, 1853, Captain Galton again said:

"It would tend to increased safety in the working of the line if the arrangement were adopted that a train should not be allowed to pass a station until it had been ascertained that the line was free from obstructions up to the next station."

In a report on another collision on the same road Captain Galton again said:

"When considered in connection with many other accidents, this one shows how impossible it is practically at all times to preserve trains from collisions, when their safety depends alone upon the interval of time which elapses between the starting of the trains; and it adds another argument to the many which already exist in favor of adopting a system of working all trains, in which the interval between the trains following each other on the same line of rails is one of distance between the trains, instead of an interval of time between the starting of the trains. * * *

"This method of working a railway appears to me to be the only method which can effectually secure in practice safety from collision between trains proceeding in the same direction, especially upon lines where the trains are numerous, and where they travel at different rates of speed, and accidents from this cause have hitherto been more numerous than from any other cause."

"In my opinion this system of conducting the traffic cannot be too strongly or too frequently impressed upon railway companies as being one which is especially desirable upon lines of large traffic traversed by trains at different rates of speed."

On May 1, 1854, Captain Galton repeats his advice to the Londonderry & Enniskillen Railway, on which there was a collision. He then said:

"The line should be worked by means of electric telegraph, and no train should be permitted to leave any station until it should have been ascertained that the line was clear to the next station."

On Sept. 24, 1854, Captain Galton, in a communication to the Lancashire & Yorkshire Railway Company, said:

"My Lords direct me to request you to call the particular attention of the directors to the remarks of its inspecting officers upon this subject, and I am at the same time to point out that accidents of this description would be avoided if this portion of railway were worked by means of the electric telegraph in the manner described in my circular letter of the 12th ultimo."

Similar recommendations are repeated in these reports with almost endless reiteration and variety. Some of them seem as though they resulted from an investigation of the causes of the accident at Spuyten Duyvil.

On Nov. 9, 1854, Captain, now Sir Henry Tyler, in reporting on a collision which occurred on Oct. 21, says:

"I would beg to recommend, for the consideration of the Lancashire & Yorkshire Railway Company, that, with a view to the prevention of accidents of this nature for the future, they should cause a telegraph wire to be laid between the Eastwood and Todmorden stations, to be used for the sole purpose of telegraphing the trains; and that no train should be allowed to start from, or pass, the Eastwood station, until the line has been telegraphed to be clear for a train to run into the Todmorden station, or from the Todmorden station until the line has been telegraphed to be clear into the Eastwood station, which is, in fact, only recommending particularly, for two miles of the railway, the adoption of a system which has recently been recommended by their Lordships, as a safe means of working the whole of this, as well of the other railways of the United Kingdom."

On Nov. 15, 1854, Captain Yolland reported on a collision which occurred on the London & Northwestern Railway, near Stowe Hill tunnel:

"Had the very proper practice which has been adopted on

some railways, of not permitting a following train to enter the tunnel before the preceding train had emerged from it, been in operation at Stowe Hill tunnel, it is more than probable that this collision would not have occurred."

On June 27, 1855, Captain Tyler reported on a collision on the Northeastern Railway and said:

"If the company be not disposed to attempt at once to work their traffic entirely by telegraph, they might perhaps be induced, by a suggestion from their Lordships, to issue instructions by which all collisions between passenger trains and any other trains might be avoided, by simply directing that no train whatever should be permitted to pass a telegraph station until the previous passenger train has passed the telegraph station next in advance, and that no passenger train should be allowed to pass a telegraph station, until the preceding train—whether passenger or goods—has passed the next telegraph station. I believe that this arrangement, at least, might be carried out with the present telegraph stations; and the only collisions that would then be possible would be those between goods, coal and cattle trains."

On Oct. 27, 1855, the same inspector again reported on a collision on the Oxford, Worcester & Wolverhampton Railway:

"Many collisions of similar nature, and partly from the same cause, have occurred, and many are the representations which it has been my duty to make on the subject; but there cannot be, perhaps, a more forcible illustration than the present, of the necessity that exists for carrying out the system which their Lordships have so often recommended, viz., that of working the telegraph that no train should be allowed to start from or to pass any station, until the security of the previous train has been signified by the signal 'all clear' from the station next in advance."

As was remarked before, this kind of testimony in favor of the block system could be continued almost indefinitely. That which has been given was selected from the Board of Trade reports made during a period before the block system had been generally introduced on British lines, as it has been since, and when their condition resembled ours more closely than now. In 1858, a report by a select committee was made to Parliament. This report, with the testimony taken, is before us, and would supply some very wholesome reading to railroad managers. The committee among other things reported:

"That your committee has received much evidence with reference to the advisability of enforcing a system of telegraphic communication, and the utility of enacting that trains should not be dispatched without having ascertained by such communication that the line was clear."

"That your committee is not prepared to define the distance at which such telegraph stations should be placed, but it is of opinion that a recourse to this system would be a most effective means for the prevention of railway accidents, the largest proportion of which arise from collisions."

In 1873 another report on the "Prevention of Accidents" was made by another "Select Committee of the House of Lords." The evidence taken by this committee would supply American railroad managers with even still more wholesome reading than the other report does. On the block system this committee reported:

"There is a general concurrence of opinion among the witnesses in favor of the block system on all important railways which carry passengers."

"The system called permissive block does not afford the security of the block system, and cannot be recommended."

"Some witnesses stated that these precautionary arrangements and mechanical appliances tend to lessen the sense of responsibility in the engine-drivers. Such an effect may have been produced, but nevertheless the advantages resulting from the introduction of these systems are practically admitted by all the witnesses, and, in the judgment of the committee, decidedly preponderate."

It is to be regretted that there is not room to give an abstract of some of the testimony taken by this latter committee. The report costs only four shillings (ninety-six cents), and can be easily obtained, and railroad managers would do well to read it.

The testimony which may be found in these British reports establishes, in a very conclusive way, that the block system is an effective means of preventing, or diminishing to a very great degree, accidents from rear collisions. It follows, then, from what has been said:

1. That the New York Central and many other railroads depend for protection from rear collisions upon rules which it has been shown a great many times it is practically impossible to enforce with any reasonable degree of certainty.

2. The road named has not adopted a system which the clearest evidence shows to be practically effective in diminishing, if not entirely preventing, accidents from rear collisions, especially on lines with many trains which run at different speeds.

3. The neglect of their employees does not release the New York Central Company from the terrible responsibility for the late accident, when it is apparent that neglect must be expected, and when well-known and effective safeguards to protect the public against the consequences of such neglect have not been provided.

December Accidents.

Our record of train accidents in December, given on another page, shows for that month a total of 113 accidents, in which 36 persons were killed and 96 injured. In 20 of these accidents one or more persons were killed; in 21 others there was injury but not death, while in 72, or 63.7 per cent, of the

whole number, there was no injury serious enough for record.

As compared with December, 1880, there was a decrease of 23 accidents, an increase of seven in the number killed, and a decrease of 45 in that injured. That the number of accidents should decrease was to be expected, when the absence of snow and severe weather this year is considered.

These accidents may be classed as to their nature and causes as follows:

COLLISIONS:	
Rear collisions.....	39
Butting collisions.....	12
Crossing collisions.....	3
—54	

DERAILMENTS:	
Broken rail.....	6
Defective rail-joint.....	3
Broken switch-rod.....	1
Broken bridge.....	3
Spreading of rails.....	6
Broken wheel.....	2
Broken axle.....	1
Accidental obstruction.....	4
Misplaced switch.....	3
Open draw.....	1
Rail purposely removed.....	3
Malicious obstruction.....	2
Unexplained.....	21
—56	

Poiler explosion.....	1
Broken connecting rod.....	1
Car burned while running.....	1
—3	

Total..... 113

Six collisions were caused by trains breaking in two; four by mistakes in orders or failure to obey them; two by misplaced switches; one each by cars run out of a siding, by failure to use signals and by the wreck of a train on another track. For 41 of the collisions no special cause is assigned.

A general classification, as close as is practicable in the absence of more extended information, gives 19 accidents caused by defects or failures of road; 12 by defects or breakages of equipments; 1 due to the elements; 4 caused by accidental obstructions not readily to be foreseen or prevented by the employees of the road; 51 by carelessness or defective management; 5 maliciously caused, and 21 unexplained.

A division according to classes of trains and accidents is as follows:

Accidents:	Collisions.	Derailments.	Other.	Total.
To passenger trains.....	4	19	2	25
To a pass. and a freight.....	10			10
To freight trains.....	40	37	1	78
Total.....	54	56	3	113
Casualties:				
Killed by.....	23	12	1	36
Injured by.....	47	46	3	96
Total.....	70	58	4	132

As to time, 63 accidents happened in the day time, during the hours of daylight; 45 were at night, and in 5 cases the time is not definitely given.

Of the three broken bridges, one was a temporary trestle put up to replace a bridge which had been washed out; one is described as a small trestle bridge, and the third was the span of the St. Charles Bridge over the Missouri, whose failure has been widely commented on. For its fall several causes have been assigned, and it seems not improbable that a derailment of the engine preceded and caused the failure of the span.

One cause of accident seems really to have diminished; but five accidents—three derailments and two collisions—are given as resulting from misplaced switches, a smaller number than we have recorded for some time.

Five malicious derailments appear upon the record, two caused by obstructions placed upon the track, and three by the removal of rails. Two of these partook somewhat of the nature of mob violence, rails having been taken up by a gang of laborers in revenge for the attempt of the subcontractor to cheat them out of their wages.

Their action, of course, was entirely unjustifiable, but it certainly lacks the element of cowardice and secrecy which usually accompanies the train-wrecker's crime. It may here be mentioned that at least one train-wrecker received prompt justice during the month, a New Jersey court having sentenced for five years a man who wrecked a Lehigh Valley train in November by misplacing a switch.

The weather of the month was not unfavorable, having been generally mild, with an absence of the severe storms and deep snow, which were prevalent last winter. The effect is seen in the smaller number of broken rails, wheels and axles, and in the absence of snow derailments. On the other hand, the effect of mild and wet weather may be traced in the number of cases of spreading of rails.

It is to be noted that during the past year there has been a decided increase of what may be called accidents of management. Collisions, which in former years very seldom exceeded an average of one-third of the whole number of accidents, now are one-half or sometimes over that. It is probably true that the greater prosperity of the last two years has resulted in a generally better condition of both roads and equipment, while an increase of traffic and the necessary employment of inexperienced men has made the handling of the trains a more difficult matter. It is evident, however, that there is room for much improvement in signal appliances and above all in the discipline of employees.

An unsatisfactory feature of the record is the number of unexplained derailments. It is probable, judging from experience, that a considerable part of these are due to defective road-bed or tracks, but it is impossible to reduce the number reported under this head. In many minor accidents reporters on the spot will not take much trouble to search out the cause; railroad officers are not always willing to aid, and it is probable that in some cases trainmen are interested in concealing the real cause. And, even with care-

ful investigation by interested parties, it is not always possible to determine the cause of a wreck. A considerable number of derailments must always remain unexplained.

For the year ending with December the record is as follows:

	Accidents.	Killed.	Injured.
January.....	223	30	182
February.....	149	27	253
March.....	113	38	177
April.....	63	22	66
May.....	85	24	78
June.....	73	31	78
July.....	102	38	122
August.....	129	31	67
September.....	144	56	227
October.....	131	31	133
November.....	133	50	120
December.....	113	36	96

Totals.....	1,458	414	1,597
Total, same months, 1880.....	1,078	315	1,152
1879.....	910	185	609

The averages per day for the month were 3.65 accidents, 1.16 killed and 3.10 injured; for the year they were 3.99 accidents, 1.13 killed and 4.38 injured.

The average casualties per accident were, for the month, 0.819 killed and 0.850 injured; for the year, 0.284 killed and 1.095 injured.

The averages per month for the year were 122 accidents, 35 killed and 133 injured, against similar averages of 90 accidents, 26 killed and 96 injured in 1880, and of 76 accidents, 15 killed and 59 injured in 1879.

The year makes a bad showing in comparison with its predecessors.

Grain Exports in 1881.

Exports of breadstuffs from all United States ports for the calendar year are reported as follows by the Bureau of Statistics—flour in barrels and grain in bushels:

	1881.	1880.	Decrease.	P.c.
Flour.....	6,715,857	6,763,165	47,328	0.7
Wheat.....	118,203,990	143,635,365	25,431,375	18.0
Corn.....	72,474,401	113,655,229	41,180,828	36.2
Other grains.....	3,344,186	5,094,288	2,350,102	41.2
Total bu.....	224,243,843	293,419,124	69,175,281	23.6

The chief part of this large decrease was in the last half of the year, when the exports were:

	Flour.	Wheat.	Corn.	Other.
1881.....	2,844,067	59,959,004	32,959,996	1,605,494
1880.....	4,003,192	91,208,785	51,835,412	3,169,286
Decrease.....	1,159,125	31,249,781	18,875,416	1,563,792
Per cent.....	29.0	34.3	36.4	49.3

The sum of these decreases is equivalent to 56,905,051 (34.7 per cent.) bushels, against 12,270,230 bushels (9.5 per cent.) in the first half of the year.

The decrease in the value of the exports was much less than the decrease in the quantity. For the whole year the decrease in value was 18.8 per cent., against 23.6 per cent. in quantity, and for the last half-year, in which the quantity exported were 34.7 per cent. less than in 1880, the value of it was 27 per cent. less.

In December the decrease in exports, except flour, was less than in previous months of the half-year. But then there were enormous exports of wheat from San Francisco, amounting to 4,595,000 bushels, which was 55 per cent. of the total wheat exports.

The percentages of the total (value) exported from each port during the year and also during the last half of the year in 1881 and 1880 were:

	Year.		Last half year.	
	1881.	1880.	1881.	1880.
New York.....	43.6	47.9	43.1	46.8
Boston.....	6.7	5.8	6.0	5.9
Philadelphia.....	7.3	9.4	6.5	9.0
Baltimore.....	15.7	18.7	14.5	19.6
New Orleans.....	4.4	4.3	2.1	4.3
San Francisco.....	15.1	6.7	18.6	6.8
Chicago.....	1.4	1.3	1.7	1.8
Port Huron.....	1.1	0.7	1.2	0.9
Toledo.....	0.6	1.7	0.7	2.3
Portland, Or.....	2.3	1.0	3.0	0.7
Other ports.....	1.1	2.5	1.6	1.9
Total.....	100.0	100.0	100.0	100.0

In the whole year the four Eastern ports (Boston, New York, Philadelphia and Baltimore) exported 73.3 per cent. of the whole in 1881, against 81.8 in 1880, and the two Pacific ports 17.4 per cent. of the whole in 1881, against 9.2 in 1880; but in the last half of the year the percentages were:

	1881.	1880.
Four Eastern ports.....	70.1	81.3
Two Pacific ports.....	21.2	8.7

The manner in which the different ports have been affected by the failure of crops in some parts of the country, and the lessened foreign demand, may be seen by the following comparison of the values of exports in the first half and in the last half of the year at the leading ports:

	Jan. to June.	July to Dec.	More or less in 2d half.
New York.....	\$49,293,145	\$48,341,851	Less.
Boston.....	8,235,104	6,778,410	Less.
Philadelphia.....	9,068,265	7,307,968	Less.
Baltimore.....	19,000,347	16,291,052	Less.
New Orleans.....	7,460,312	2,347,097	Less.
San Francisco.....	11,849,071	22,020,210	More.
Chicago.....	1,333,187	1,866,319	More.
Port Huron.....	1,053,240	1,368,158	More.
Portland, Or.....	1,907,406	3,345,302	More.
Total.....	\$111,980,917	\$112,137,043	Less.
In 1880.....	122,356,085	153,580,174	Less.

In 1880 the total exports in the last half of the year were \$31,200,000 more than in the first half; in 1881 they were nearly the same in both halves. All the Atlantic ports exported less in the second than in the first half of 1881, but while the exports at New York were not 2 per cent. less in the second half, at New Orleans they were 69 per cent. less, at Philadelphia 19½, at Boston 19 per cent. and at Baltimore 14½ per cent. less. The gains were almost exclusively at the two Pacific ports, whose exports were nearly twice as great (84½ per cent. more) in the last half than in the first half of the year. New York exports have

suffered much less than those of any other port in the last half of the year; New Orleans exports, which were 6.6 per cent. of the whole in the first half of the year, and 4.3 per cent. of the whole in the last half of 1880, fell to 2.1 per cent. of the whole, and were not one-twentieth part of the New York exports.

The values of December exports compare as follows:

	1881.	1880.	Decrease.	P.c.
Value exported.....	\$13,800,128	\$18,024,243	\$4,824,115	26.0

In this month the value of exports from San Francisco was nearly as great as that of the New York exports, though San Francisco exports nothing but wheat and flour, and New York corn also, which is sometimes the chief export. These two places exported 74 per cent. of the whole last December. At the four Eastern ports the aggregate export values were but \$7,659,661 in 1881, against \$15,000,220 in 1880—a decrease of 99 per cent. In this month the decrease from 1880 was 37.7 per cent. at New York, 60 per cent. at Baltimore, 59.5 at Boston and 76 per cent. at Philadelphia.

The exports from New Orleans in December were valued at \$61,312 against \$542,368 the year before, an average of \$817,334 per month in the whole year 1881, and an average of \$1,000,100 in 1880. Last December they consisted of 499 barrels of flour and 85,506 bushels of corn, and of course were wholly insignificant.

The December exports are not only less than the average for the year, but far below the average for the last six months, which, however, is usually the case. The average for the previous five months in 1881 was \$19,667,503, while in December the exports were \$13,800,128. In 1880 the December exports were \$18,024,243 against an average of \$26,990,786 in the five months previous. December exports were 30 per cent. below the average of the previous five months in 1881, but they were 45 per cent. below such average in 1880. If we compare the exports of the Atlantic ports by themselves, however, the December exports show an exceptional decrease in 1881.

Foreign Railroad Notes.

In a recent debate in the Imperial Parliament of Germany one of the members called to mind Prince Bismarck's "anti-discrimination" policy, according to which rates per mile on imports, especially of agricultural products and timber, should be as high as on domestic productions of the same kind, very much like the *pro rata* tariff often advocated as in the interest of New York farmers, etc. In Germany, Herr Büchtemann said, the result of this policy had been as follows: At Berlin 8,000,000 to 12,000,000 bushels of rye are received yearly. Formerly a very large part of this rye was brought to Berlin from Russia by the German railroads which reach the Russian border. Since the advance in the railroad import rates on grain the importations have not been reduced, but they no longer arrive by the German railroads, but the Russian railroads bring it to Baltic ports, whence Russian, Swedish and Norwegian ships carry it to Stettin, and it goes thence by river and canal to Berlin. The railroads lose the profit they used to make on the grain imports, but the farmers have to compete with foreign grain just the same. So in the Rhenish provinces, which have always imported a great deal of grain. They used to get it largely from Hungary and Galicia, whence it was carried at low through rates by the Austrian and German railroads. The abolition of special import rates has almost destroyed this traffic, it is true, but the Rhenish provinces continue to import their grain, which now comes up the Rhine chiefly, brought there from America or Southern Russia, and if from Russia by the long voyage south to the Mediterranean, west to the Atlantic, north to the Channel, east to the Rhine, and south up the Rhine—more than four times as far as the distance from the Russian grain fields to the Rhenish towns. Further, at the same time the low export rates were abolished, and the iron manufactures of the Rhenish provinces which formerly were exported to Russia and Hungary by rail, now go by water, and the railroads lose their profit on these also. Recently the government's policy has been modified, however. There were large exports of sugar (beet sugar) from Bohemia (in the Kingdom of Austria) to England, which had always gone by rail, crossing Germany to North Sea ports. The export rates being advanced, the exporters sent it by water down the Elbe, the Austrian railroads making contracts with the river lines. Suddenly the managing authorities of one of the Prussian state railroads telegraphed to the Austrian roads that they might make a low rate from stations in Bohemia to Hamburg in competition with the Elbe boats. The rates authorized are about one-third less than the regular rates of the Prussian state railroads. But the Austrian roads, which had so long been compelled to allow what we would call "arbitrariness," to the Prussian roads on the export traffic, and had seen it greatly reduced in consequence, declared that they did not care to make through rates on that basis. In connection with the river their share of the rate was greater, and the river was good enough for them. Hereupon the Prussian state railroads and other German railroads established their proposed low export rate, and allowed the Austrian roads their local rate, the whole amount of the reduction coming out of their part of the rate—very good railroad policy, probably, but as far as possible from the Chancellor's policy of uniform rates for the protection of home agriculture. The member recalled Bismarck's speech two years ago, in which he largely based a change in a most important ministry and the whole railroad policy on the lower rates per mile charged on imports of Austrian timber than on products of German forests.

The German Journal of Industry says that at the end of

1879 there were 272,831 persons employed on the German railroads, and a year earlier there were 182,984 on the French roads. The number of employes in the two countries compared as follows:

	Germany.	France.
Per 100,000 of population.....	611	493
Per 100 miles of railroad.....	1,343	1,331

In Germany, where the railroads are many and small, about three times as many persons per 100 miles are employed with the "general management" as in France, where six companies work nearly all the roads. In the road department and in the traffic department more men are employed in Germany than in France in proportion to mileage; but in train and shop service the reverse is true. On the New York Central road last year—the American road with the heaviest traffic, and probably with two or three or more times the average traffic of the German and French roads, 1,450 men were employed per 100 miles of road, but the average in this country is probably not more than 600. In France 68,865 of the railroad employes (more than one-third) were discharged soldiers, and 13,554 were women. In both countries the roads are compelled to take a certain number of soldiers into their service; and this is done to provide occupation for men who, because in service, have not been able to learn one.

There has been an official investigation of the great railroad accident at Charenton, in France, Sept. 5, which has caused grave charges to be made against the Paris, Lyons & Mediterranean Railroad of failure to provide proper safety appliances and to employ sufficient men to conduct the traffic properly. But the investigation shows that the collision was due to gross neglect of duty by a large number of employes in responsible positions. There was a great church festival the day before the accident, and of 18 station employes 12 were absent at this festival until nearly morning, and eight of them failed to report for duty the next day. The place of the regular signal man was filled by a boy of 18, and it was his error which sent an arriving train into a train standing at the station. The station master will be prosecuted.

About the first of November this year there were great snow blockades on railroads 200 miles south of Moscow, and about in the latitude of Berlin. On one line traffic was interrupted five days. Great numbers of the country people were employed at 20 to 25 cents a day to clear the tracks of snow.

Massachusetts Railroads in 1880-81.

The Thirteenth Annual Report of the Massachusetts Railroad Commissioners, for the year ending with September, 1881, shows in comparison with the previous year an increase of 11½ per cent. in passenger traffic and of 12½ per cent. in freight traffic of the 2,755 miles of railroads reporting to the Commissioners. The increase in passenger traffic is less than the year before, but larger than in any previous year. Indeed, from 1873-74 to 1877-78 the passenger traffic of the Massachusetts railroads grew smaller every year. In 1879 there was an increase of 4 per cent., still leaving it smaller than in any of the four years from 1873 to 1876 inclusive; but in 1880 an increase of 15 per cent. made it larger than ever before, and now we have another large gain with very little increase in road. The freight traffic decreased from 1873 to 1875, but since has increased every year; from 1878 to 1879, 12½ per cent.; from 1879 to 1880, 19 per cent., and from 1880 to 1881, 12½ per cent.

The passenger earnings increased last year 19.3 per cent., though the increase in passenger traffic was but 11½ per cent.; in freight earnings the increase was 4.9 per cent., or much less than the traffic. The passenger earnings are much larger than ever before; but in three years, from 1873 to 1875, they were larger than in any following year until 1881. The freight earnings are also larger than ever before.

The total earnings from transportation were 6½ per cent. more than in 1880, when they were 15.4 per cent. more than in 1879. The amount of increase is but about half as great as the year before.

In the part of the report now issued there is no statement of working expenses by themselves; but in expenses and rents together there was an increase of \$3,114,085, or 13 per cent. The "net income" reported, being gross income less expenses and rents, was \$10,701,751, which is \$490,064, or 4.4 per cent., less than the year before, in spite of the large increase in earnings, which shows that here, as on the four trunk-lines whose expenses have been reported for the same year, there has been a very large increase in expenses. This net income was 5.6 per cent. on the capital invested in the railroads, against 6.2 per cent. in 1880, and 5.8 in 1879. Only in 1875, 1877 and 1878 was this percentage smaller than in 1881 in the nine years which have been reported.

The increase of 11½ per cent. in passenger traffic was carried with an increase of 9.4 per cent. in mileage of passenger trains, and the increase of 12½ per cent. in freight traffic with an increase of 6 per cent. in freight-train mileage. The average freight-train load, however, remains light—only 103 tons; while the average passenger train load was 63½, which is above the average on most railroads in other parts of the country.

The earnings from local passengers were nearly two-and-a-half times those from through passengers; the earnings from through freight were nearly the same as from local freight (a little greater). The percentage of increase was much greater in the through traffic, however. The year before the local freight earnings were larger than the through.

The average rates in 1880-81 were 2.20 cents per passenger per mile and 1.73 cents per ton per mile, against 2.24

cents and 1.85 cents the year before. This average passenger rate is perhaps as low as anywhere in this country; but the average freight rate is comparatively high, which is due probably to the large proportion of local traffic and short hauls.

The astonishing increase of 18 per cent. in the average number of men employed by the railroads is reported, making it 9.44 per mile of road. Probably a number of men engaged in constructing new road is included in the number of employes in 1881, which would account for the increase. This item will be almost valueless if it includes other men than those whose wages are charged to working expenses.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Allegheny Central.—Extended from Friendship, N. Y., northeast to Angelica, 9 miles. Gauge, 3 ft.

California Southern.—Extended northward 11 miles to a point forty-seven miles from San Diego, Cal.

Catskill Mountains.—Extended from Edgewood, N. Y., to Stony Clove, 4 miles.

Harrisburg & Potomac.—Extended from Jacksonville, Pa., to Leesburg, 2 miles.

This is a total of 26 miles of new railroad for 1881, making 8,592 miles thus far reported for that year.

The following new track is reported for 1882:

Buffalo, Pittsburgh & Western.—Track on the *Salamanca Extension* is laid from Warren, Pa., eastward 4 miles.

This makes 8 miles so far reported for the current year, against 25 miles at the corresponding time in 1881.

THE RAILROAD WAR is reported to be in a fair way of settlement; but there is no definite information as to what has been done, and it is almost certain that no plan has been accepted by all the lines yet. The most probable report is that the several lines will appoint three persons as an advisory board to examine the whole subject and recommend a plan to be followed hereafter, which will be submitted to the several companies for their acceptance. Under ordinary circumstances it would not be probable that the companies would all accept the recommendation of such a board, after they had failed to come to terms themselves. But in this case there is certainly great confidence by many well informed persons that the result will be an early peace; and this confidence, we imagine, is due to the fact that the leading companies, including those hitherto least inclined to peace, are determined to accept the recommendations made by such a board. Thus, even before a board is selected, and without any knowledge of what its decision will be, it might be almost certain that it would settle the troubles. The officers of the railroad companies can accept with good grace terms proposed by such a tribunal which they would not feel able to accept, after the positions they have taken, when proposed directly by their rivals.

The question of differences in rates may possibly be avoided by not making the agreement fix rates on differences, but only the percentages of traffic to be carried by the different lines. If this is done, as we have pointed out, each road may fix its differences to suit itself, without affecting its rivals in any way. Give the New York Central 40 per cent. of the total eastward through shipments, the Erie 25 and the Pennsylvania 30 (or any other share), and the New York roads will not suffer if the Pennsylvania charges twice as much to New York as to Philadelphia or Baltimore. And the differences may be changed from time to time as circumstances seem to require.

In this way the obstacle which could not be overcome by direct attack may be "flanked" as it were, and each road will settle matters with its several terminal cities as best it can. New York will see that its roads do not unduly favor Boston, and Philadelphia, Baltimore and New York will all keep a sharp eye on the Pennsylvania, and make life a burden to its managers if any one place is favored, or is imagined to be, more than the others.

There seems now to be no doubt that the three principal roads are ready to make an end to the war on any terms not grossly unfair; but as to the Baltimore & Ohio there is not the same confidence. This road has but a comparatively small share of the through trunk-line traffic, and it has apparently become convinced recently that it can get along very well without any profits from that traffic; and this enables it to insist the more strongly on having the largest possible share of it, regardless of consequences, for the consequences will not be very serious for it.

MR. VANDERBILT'S SUPPORT OF MR. GOWEN is reported in some of the newspapers to indicate that there will be a close connection of the Reading with the New York Central for the purpose of doing a trunk line business to and from Philadelphia, which will enable the New York Central to get a large share of the traffic now carried by the Pennsylvania. It seems to be assumed that no trunk line but the Pennsylvania has been able to get into Philadelphia heretofore; but both the New York Central and the Erie have freight lines into Philadelphia, and in 1880 they carried a very considerable share of all the trunk line freight arriving there, and doubtless a share of that shipped thence. Indeed, at one time (for a few weeks) it was reported that the Erie brought more grain than the Pennsylvania itself to Philadelphia, and the indications are that it had that year as large a share of the shipments to Philadelphia as the Pennsylvania had of the shipments to New York, and the New York Central not much less. It seems to be forgotten

that ownership or influence or even harmony is not necessary to the establishment of an interchange of traffic between two roads. If the traffic is profitable, any line that can get it will usually be eager to have it, without regard to the connecting railroads that may bring or receive it. Judging from the past seven years, this through traffic is not so profitable that the Reading should be eager to share it; though if the status in 1880 can be restored and maintained, it will be doubtless worth having and preparing for. The Reading is in position to compete with the Pennsylvania more effectually for the large and profitable traffic between New York and Philadelphia and to give the Baltimore & Ohio an outlet to New York, but by the latter it would help one of the rivals of the New York Central about as much as it hurt the other. The contract for a new trunk line across Pennsylvania over the New Jersey Central, the Reading and the Pennsylvania to Red Bank to be connected thence with the Wabash, probably cannot be abrogated now; but if so, it would not harm the Pennsylvania particularly, as a new trunk line will affect it as well as the other trunk roads. If the new line were to get traffic only from the Wabash, whose freight now is interchanged almost entirely with the Vanderbilt roads and the Great Western of Canada, to prevent the completion of the line of course might prevent diversion of traffic from the Lake Shore and the New York Central, and the giving of it for part of the distance to the Pennsylvania; but the blocking of this route will not leave the Wabash wholly dependent upon the Vanderbilt roads, by any means. It is not at all likely that the proposed new line will get all its traffic if completed, however, and the establishment of it is not specially a serious matter for the Vanderbilt roads, which are likely to have other new rivals by that time.

TRUNK LINE RATES have been modified within a week in both directions. It will be remembered that the formal and general reduction made Aug. 6 last was in consequence of contracts at the rates then made common. The contracts were generally made for the remainder of the year 1881, and it was hoped that after their expiration rates to the West could be restored. It was in anticipation of this that about the 1st of November a meeting was held to advance rates, and agreed to advance them about one-third (to 60 cents for first-class freight) Jan. 1. This agreement was vetoed by Mr. Vanderbilt as unadvisable until other questions at issue should be settled. But the Pennsylvania and the Baltimore & Ohio advanced their rates to the basis then agreed upon immediately, nominally at least, and for a large portion of their traffic east of Chicago and St. Louis have doubtless been able to get the advanced rates. It seemed of the utmost importance that no new contracts should be made after December, but contracts were made, and that at rates about one-third lower than those of Aug. 6 and, it is said, they were made to cover shipments for six months ahead. Last Monday public announcement was made that the rates to everybody would be on the basis at which (as reported) the contracts were made. The new rates, the tariff of Aug. 6, and the tariff for some years previous to Aug. 6 are as follows, in cents per 100 lbs. from New York or Boston to Chicago:

Rate of—	1.	2.	3.	4.
January 16, 1882.....	30	25	20	15
August 6, 1881.....	45	32	25	19
Previously.....	75	60	50	40

The new rates are just about 60 per cent. less than those of a year ago. A month's business out of New York alone at these rates will yield about \$400,000 less than a year ago.

The same day the Vanderbilt roads at Chicago advanced their rates on grain and flour from 10 or 12½ to 15 cents per 100 lbs. The Pennsylvania had been charging 20.

It is very difficult to see how west-bound rates can be restored if contracts have been made as reported; but it is quite possible that they were made with a saving clause, and that after the general reduction of Monday the contract rates can be advanced or abrogated.

"DIFFERENTIAL RATES" are much spoken of by the news, papers and by railroad men now in a sense exactly the opposite of that which properly belongs to the term. It originated in France, is commonly used on the continent of Europe, but not in England (so far as we know), and not in this country until recently. A "differential rate" is one which is different per ton per mile from the ordinary or standard rate. A rate from Chicago to New York the same as from Chicago to Baltimore would be a "differential rate." A leading French legal authority (Duverdy, *Traité du Contrat de Transport*), defines the term elaborately, with illustrations, as special rates which vary for the same kind of freight on account of the quantity delivered by the shipper, on account of the distance carried, or on account of the direction in which the freight is carried, or the destination of the freight. As illustrations he says that a rate of 10 centimes per ton per kilometre for shipments of 100 tons or less, and 8 centimes for more than 100 tons would be "differential rates;" also 10 centimes per ton per kilometre from Paris to Tours and 8 centimes from Paris to Nantes (about twice as far); or 5 centimes from Paris to Orleans and 10 centimes from Orleans to Paris; or a rate imports less than on domestic product of the same kind between the same places (very common at times), or rates on exports less than on the same freight destined for home consumption (still more common, and in England and other countries as well as France); or, rates on freight crossing France from one foreign country to another less than for the same freight if shipped or delivered in France. The term would never have been popularly used if there had not been a

standard rate per ton per mile, and it does not belong to railroad language here except in discussing such rates, or different rates for the same freight between the same places. Substantially all American freight rates are "differential rates." Differences in rates do not make differential rates; and absence of differences does make them if the distances differ.

THE DIFFERENCES IN RATES TO SEABOARD PORTS probably appear very differently to different railroads. The effect of them on profits probably are seen better on the Pennsylvania Railroad than on any other. All its through traffic eastward, to whatever port consigned, passes over the same line as far as Harrisburg. Thence the distances are 85 miles to Baltimore, 105 miles to Philadelphia, and 195 miles to New York. The question to it is, therefore, whether it shall haul freight these different distances for the same amount of pay. Last year it brought about 60,000,000 bushels of grain and flour as far as Harrisburg. With the differences as they have been it would get about \$300,000 more for carrying this if it went to Philadelphia, and \$900,000 more if it went to New York, than if it all went to Baltimore. With no differences in the rates, it would have to haul about 1,500,000 tons 110 miles, equal to 165,000,000 ton-miles, without any payment, in order to carry this freight to New York instead of Baltimore.

Of course it will not do this if it can help it, and if rates are made uniform to all ports the only way it can help working for nothing is to do what it can to have all freight stop at Philadelphia or turn down to Baltimore rather than go to New York. The differences seem small matters when we speak of 912 miles to Chicago, 823 to Philadelphia; etc., but when we stand at Harrisburg with two million tons of freight or so (for provisions were not included above), it makes a great deal of difference whether we shall haul it 85 miles or 195, and that is just the position of the Pennsylvania Railroad.

KANSAS CITY PASSENGER RATES, as probably many have already forgotten, were badly demoralized in the latter part of 1880 by contest between the Wabash and the Chicago & Alton, rates from Chicago to Kansas City going as low as \$5, and from St. Louis to Kansas City to 50 cents. It will be remembered that at that time large numbers of unlimited tickets were sold between Chicago and St. Louis by the Wabash and between St. Louis and Kansas City by the Chicago & Alton. A recent meeting of passenger men in Chicago to restore Kansas City rates calls to mind the fact that the effect of this war, a year after the parties had come to an agreement, still keeps rates at less than one half the regular figures. The meeting was to settle a little quarrel caused by charges of bad faith which had for some weeks still further demoralized the demoralized rates left by the war of 1880. It was successful, but the rates which are "restored" are \$7 from Kansas City to Chicago, Jacksonville and Springfield, and \$4 from Kansas City to St. Louis, the regular rates being \$14.80 and \$8.50 respectively, and the \$4 and \$7 rates being reached by paying rebates. These rates are necessary because of the number of unlimited tickets outstanding. Thus an important traffic has been spoiled for more than a year (and the end is not yet) by a contest of a few months of 1880.

The passenger agent, make the maintenance of rates out of Kansas City a personal matter, each depositing \$100 in a bank and agreeing to redeem all tickets sold at less than the agreed rate, or with a longer limit of time, at double the regular price of an unlimited ticket.

CHICAGO SHIPMENTS EASTWARD for the week ending Jan. 7 were 55,189 tons this year, against 67,426 in 1881 and 40,238 in 1879. Of the shipments this year (which are very nearly equal to the average weekly receipts last December) the Chicago & Grand Trunk carried 4.5 per cent., the Michigan Central 29.2, the Lake Shore 32.1, the Fort Wayne, 15.7, the Pan-handle 16.1, and the Baltimore & Ohio 2.4 per cent.

For the week ending Jan. 14 the Chicago Board of Trade reports the shipments billed from Chicago to have been 55,986 tons, against 54,935 tons in 1881, and 45,036 tons the previous week. Again we find the Vanderbilt roads taking most of the grain and flour. Together they had 67½ per cent. of the flour and 69 per cent. of the grain; while the Fort Wayne had but 10.5 per cent. of the flour and 5.6 per cent. of the grain. The Pan-handle carried twice as much of these as the Fort Wayne (5,840 tons against 2,715), which perhaps never happened before. The Erie apparently is getting all its freight by this road now, though its South Shore Line was transferred at the beginning of the year not to this road but to the Fort Wayne. The two Pennsylvania roads have most of the provisions, however—58½ per cent. against 34 per cent. on the Vanderbilt roads. The Fort Wayne alone has nearly 40 per cent. of them. Of the total shipments 8,544 tons (15½ per cent.) were flour, 32,745 tons (58½ per cent.) grain, and 14,702 tons (26½ per cent.) provisions.

The division of the traffic among the lines was due doubtless to the fact that rates were lowest by the Vanderbilt roads on grain and flour, and by the Pennsylvania roads on provisions.

THE BALTIMORE & OHIO announces that last December, in spite of the railroad war, its earnings on its main stem and branches were \$177,409, or 12.3 per cent., more than in 1881, when through rates were at least twice as high. It also reports that \$78,008 of this increase was in passenger earnings. As this company does not usually report its monthly earnings, and does not now report them for this

other two months of its fiscal year since its annual report was made, we may suppose that December made an unusually good showing. This must have been due wholly to the local traffic, for the through traffic to Baltimore was certainly lighter last December than in the corresponding month of 1880. Its grain receipts fell off from 3,873,550 bushels in 1880 to 2,240,630 in 1881, and if the traffic in December was divided as during the whole year, the Baltimore & Ohio had a much smaller share of this smaller traffic. Activity in coal and iron traffic do much for the lines of the company this side of the Ohio; but on the other side the light crops of 1881 must supply much less traffic than the heavy ones of 1880. There, too, however, this road has a considerable coal and iron traffic.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:
Louisville, New Albany & Chicago, annual meeting, at the office in New York, Feb. 10, at noon.
Fitchburg, annual meeting, at the passenger station in Boston, Jan. 31, at 11.30 a. m.
Boston & Albany, annual meeting at the passenger station in Boston, Feb. 8.

Dividends.

Dividends have been declared as follows:
Milwaukee, Lake Shore & Western, 6 per cent. on the income bonds from the earnings of 1881, payable May 1 and Nov. 1 next.
Marquette, Houghton & Ontonagon, 4 per cent. on the preferred stock from the earnings of 1880, payable Feb. 15.
St. Paul, Minneapolis & Manitoba, 3½ per cent., semi-annual, payable Feb. 1. Transfer books close Jan. 21.
Oregon Railway & Navigation Co., 2 per cent., quarterly, payable Feb. 1. Transfer books close Jan. 20.
North Carolina (leased to Richmond & Danville), 6 per cent. for the year, payable one-half April 1 and one-half Sept. 1.

Mail Service Extension.

Mail service has been ordered over new railroad lines as follows:
Texas & Pacific.—Service ordered over the *New Orleans Pacific Division* from Shreveport, La., to Alexandria, to begin Jan. 23.

American Society of Civil Engineers.

At the annual meeting of this Society in New York, Jan. 18, Mr. Ashbel Welch presided.
 The board of directors submitted their annual report, which embraces the 14 months ending Dec. 3, 1881, in which they congratulate the Society upon the meeting being held in a building of its own. The report showed that there were 110 subscribers to the building fund, the total amount of which is \$14,012. The number of members in the Society at present is 605, of which 139 are residents and 466 non-residents. The report also set forth that during the fiscal year the demands made on the society for engineers to take charge of various works far exceed the number of members open to engagement. Reports were read from committees on uniform system of tests of cement, on preservation of timber, on uniform standard time, and on the award of the Normal medal.

The committee on the time and place for holding the next convention submitted a list of different propositions made on that subject, and then it was decided to hold it in Washington, the date to be fixed by the Committee on Direction.

The election of officers for the ensuing year was then held. The report of the Treasurer showed that during the fiscal year the receipts were \$16,834.60 and the expenses \$14,330.81; \$9,000 of the fellowship fund is invested in United States bonds.

A resolution was, after much discussion, adopted, which provides that any member of the Society who has contributed or shall contribute \$500 to the building fund shall be exempt from dues during his life.

Illinois Protective Rate Association.

This Association met in Chicago, Jan. 12. There were present Messrs. J. M. Osborne and A. C. Bird, of the Wabash road; H. H. Courtright, Chicago & Alton; William Duncan and A. Williams, Ohio & Mississippi; Horace Tucker, Illinois Central; T. T. Garr et al., Peoria & Southwestern; G. L. Bradbury and H. C. Parker, Peoria, Decatur & Evansville; Robert Forsythe, Chicago & Eastern Illinois; J. V. Mahoney, Rock Island & Peoria; W. H. Hibbard, Vandalia; H. C. Diehl, Indiana, Bloomington & Western; Paul Morton, Burlington; P. F. Blue, St. Louis Division, Louisville & Nashville; W. M. Sage, Rock Island; A. E. Schrader, Illinois Midland; H. S. Shepherd, Louisville, New Albany & St. Louis; George Olds, Chicago, Milwaukee & St. Paul roads.

Mr. H. C. Diehl acted as Chairman, and H. O. Canfield as Secretary. Mr. George L. Carman was elected arbitrator; J. M. Osborne, H. H. Cartright, and B. F. Blue, Committee on Appeals.

The greater part of the day was devoted to a discussion of the general bearings of the Illinois freight laws upon the railroads and in discussing the details connected with the work of the association. A circular was prepared inviting all lines in the state to join.

On the following day an additional line, the Lake Erie & Western, was represented. It was explained that the purpose of the association was to enforce and maintain the tariff of the Railroad Commissioners of the state. It was also decided that the Commissioners' maximum rates should be the minimum rate of the lines in the association.

A permanent organization was completed. It was reported that the effort to combine the association with the Illinois Rate Association had proven unsuccessful.

The remainder of the day was spent in agreeing upon by-laws and rules of order. An effort will be made to have the lines not in the association sign the agreement. When this is done the President will call another meeting.

Western Trunk Lines Association.

A meeting of this Association was held in Chicago Jan. 9 and 10, at which a "Committee on Discrimination" made a report recommending that the general ticket agents of the trunk lines whose actions are complained of (all but the Pennsylvania) be invited to a meeting of the Association in New York at an early day, to ascertain if the questions in controversy cannot be settled by agreement; and the objects to be attained at this meeting the committee stated as follows:

"1. To cause the Eastern roads to cease discriminating against the associated roads.

"2. To cause the Eastern roads to give, without buying it, to each of the associated roads as fair and just a proportion of their west-bound emigrant traffic as the positions, importance as convenient carriers of this class of traffic, and their facilities warrant each to expect or demand.

"3. To cause the managers of the Eastern roads to so control their west-bound ticketing agents as to so divide the business as suggested in Clause 2 that it will not be necessary for the Western roads to offer or to pay the ticketing agents any commission or other remuneration for ticketing the west-bound emigration.

"4. To cause the Eastern roads to report to and pay over to the Western roads all of the excess baggage moneys that are collected for them by the Eastern roads on emigrant baggage sent over the lines of the Western roads."

It recommended that before such meeting be held the representatives of the roads in the Association consult their managing officers and ascertain how they shall vote and bind their roads to refuse to honor tickets issued over them by such Eastern roads (except first-class tickets), if (1) such roads persist in their discriminations, or (2) refuse to report and pay over all the excess baggage moneys collected since 1881; also whether the Association's roads shall act as a unit in all matters brought up at the meeting, and shall insist on the Eastern roads abandoning the arrangement by which they give all possible immigrant traffic to the Rock Island road, and various other questions.

The Committee also reported the following letter to be sent to the trunk-line general ticket agents:

"DEAR SIR: The Western Trunk Lines' Passenger Association has succeeded in establishing the right of the lines forming it to make their own rates for their own companies, and has received payment for arrears claimed on reports of emigrant traffic for 1881, accompanied by assurances from the Eastern trunk lines that proper proportions, as claimed, would be reported on all future emigrant business.

These being the principal objects for which the association was formed, it is now ready to confer with the Eastern trunk lines in accordance with their expressed desire, for the purpose of discussing methods for the future conduct of the emigrant traffic. While this Association would prefer to meet the Eastern trunk lines as a body, it is not now adverse to meeting each line separately, if desired, as its principal claims heretofore made have been substantially conceded and the situation of affairs therefore considerably changed.

In this connection, however, it is only fair to state that any or all meetings will be barren of any good result if the following claims of the Western Trunk Lines' Passenger Association are not fully allowed by the other party to the conference:

"First. We insist that all discrimination against lines in the Association, and favoring ones outside of it, of which we have already complained, shall cease absolutely, and the west-bound business be divided between all lines in such fair and just proportions as their position, importance and facilities warrant.

"Second. We insist that you shall in the future report to each line in the Association its proper proportion of all money collected for them for excess baggage checked over their lines by you, which has never yet been done, as you are doubtless aware.

"With this understanding, we are willing to meet you in New York at any time you may suggest, although the last week in January would suit us better than any other time. We have now complied with your request for a conference, on a basis so manifestly just that we are sure it cannot be successfully assailed. If you will not meet us, or if our differences are not harmonized at said meeting, and the unjust discriminations complained of are continued, we hereby respectfully notify you that we shall be forced to decline to receive any tickets of your issue other than regular first-class tickets at full first-class rates or proportions, and shall be obliged to take such other steps towards reprisals as the means at our command make available. We sincerely hope, however, that such action on our part will not be necessary, and that everything may be arranged on a mutually satisfactory basis, and with this end in view, would be thankful for a prompt reply in order that we may arrange for the meeting as soon as possible."

This report was received, and another meeting was called for Jan. 19, at which the representative of each road is expected to have full authority from his company for any vote that he may give.

ELECTIONS AND APPOINTMENTS.

American Society of Civil Engineers.—At the annual meeting in New York, Jan. 18, the following officers were chosen: President, Ashbel Welch, Lambertville, N. J.; Vice-Presidents, James B. Eads, St. Louis, and William H. Paine, Brooklyn; Secretary and Librarian, John Bogart, New York; Treasurer, J. J. R. Croes, New York; directors, Thomas C. Keefer, Ottawa, Canada; Col. Thomas L. Casey, Washington; Joseph P. Davis, New York; George S. Greene, Jr., New York, and George W. Dresser, New York.

Boston, Hoosac Tunnel & Western.—At a meeting of the board held last week the following officers were re-elected: President, Wm. L. Burt; Vice-President, George I. Post; Treasurer, Estes Howes.

Bradford, Bordell & Kinzua.—At the annual meeting in Bradford, Pa., Jan. 9, the following directors were chosen: W. W. Brown, John C. McKenna, W. C. Warner, A. I. Wilcox, Bradford, Pa.; John J. Carter, H. F. Sweetser, Titusville, Pa.; W. S. Bissell, John F. Moulton, R. G. Taylor, B. C. Williams, Buffalo, N. Y.; R. C. Vilas, New York. The new board elected the following officers: President, John J. Carter; Vice-President and General Manager, R. G. Taylor; Secretary and Treasurer, B. C. Williams.

Bradford, Bordell & Smethport.—At the annual meeting in Bradford, Jan. 9, the following directors were chosen: W. W. Brown, Bradford, Pa.; Henry Hamlin, Smethport, Pa.; J. L. Brown, Wilcox, Pa.; John J. Carter, H. F. Sweetser, Titusville, Pa.; W. S. Bissell, R. G. Taylor, B. C. Williams, Buffalo, N. Y.; B. N. Hurd, Syracuse, N. Y. The new board elected the following officers: President, W. W. Brown; Vice-President, R. G. Taylor; Secretary and Treasurer, B. C. Williams.

Buffalo, New York & Philadelphia.—Mr. James F. Gardner has been appointed Assistant Superintendent. Mr. Byron F. Burdick is appointed Superintendent of Telegraph and Chief Train Dispatcher, to succeed Mr. Gardner.

Burlington & Ohio River.—The following changes were made Jan. 5: The office of Assistant President is abandoned. George P. Merrill has been appointed General Manager and Purchasing Agent. John K. Lape has been appointed Superintendent of Equipment. All communications pertaining to the business of their departments should be addressed Honore Building, Chicago, Ill.

Central, of New Jersey.—Mr. Wm. W. Stearns, just appointed General Superintendent, is the third of that name, his father, John O. Stearns, and his uncle, Josiah Q. Stearns, having both been General Superintendents before him. Mr. Stearns has been on the Central since he was a boy.

Mr. Rufus S. Blodgett is appointed Assistant General

Superintendent in charge of the New Jersey Southern Division, and Mr. W. S. Polhemus Assistant General Superintendent in charge of the Lehigh & Susquehanna Division.

Champlain Transportation Co.—At the annual meeting in Burlington, Vt., Jan. 6, the following were chosen President, Le Grand P. Cannon; directors, Isaac V. Baker, A. L. Inman, George B. Chase, V. P. Noyes, E. Root, R. S. Taft.

Chicago, Burlington and Kansas City.—Mr. John W. Smith has been appointed General Superintendent of this road, formerly the Burlington and Southwestern. Mr. J. H. Best, Jr., is appointed General Freight and Ticket Agent. Offices in Keokuk, Iowa.

Cincinnati, New Orleans & Texas Pacific.—At the annual meeting in Cincinnati, Jan. 16, the following directors were chosen: Theodore Cook, Wm. A. Goodman, Edgar M. Johnson, Alexander Macdonald, John Scott, Cincinnati; Frederick Wolfe, Montgomery, Ala.; Charles A. Page, New York.

Clarion, Mahoning & Pittsburgh.—At the annual meeting in Brookville, Pa., Jan. 9, the following directors were chosen: S. S. Jackson, Thomas K. Litch, Brookville, Pa.; R. C. Winslow, Punxsutawney, Pa.; William M. Ralston, Elderton, Pa.; A. H. Fulton, L. A. Robertson, West Lebanon, Pa.; Rasselas Brown, F. H. Rockwell, Warren, Pa.; Myron P. Bush, C. Karr, J. F. Schoellkopf, J. H. Smith, Buffalo, N. Y.; W. H. Paulding, New York.

Cleveland & Marietta.—Mr. H. J. Booth has been appointed General Freight and Ticket Agent in place of F. B. Ogden, resigned.

Colorado Pool.—The Executive Committee of the Colorado Pool, chosen at the meeting in Chicago last week, is as follows: Marvin Hughitt, Chairman; T. J. Potter, R. R. Cable, J. C. McMullin, J. C. Gault, A. A. Talmage, J. B. Carson. The Committee has appointed Mr. J. W. Midgley, Commissioner of the Southwestern Railway Association, Commissioner of the pool.

Detroit, Lansing & Northern.—Mr. C. H. Green has been appointed General Baggage and Lost Freight Agent, with office in Ionia, Michigan.

Engineers' Club of Philadelphia.—At the annual meeting, Jan. 14, the following officers were chosen for the ensuing year: President, Rudolph Hering; Vice-President, Percival Roberts, Jr.; Secretary and Treasurer, Howard Murphy; directors, Strickland Kneass, Frederic Graff, T. M. Cleeman, J. J. De Kinder, Winfred Lewis.

Galveston, Houston & Henderson.—At a recent meeting W. H. Hardin was chosen President; Allen McCoy, Vice-President; C. G. Clifford, Secretary.

Houston & Texas Central.—Mr. J. Waldo, recently General Freight and Ticket Agent, has been appointed Traffic Manager.

Illinois Protective Rate Association.—This Association has been permanently organized with the following officers: President, H. C. Diehl; Vice-President, J. M. Osborn; Secretary, H. O. Camfield; Arbitrator, George L. Carman. Committee on Appeals, J. M. Osborn, H. H. Courtright, B. F. Blue.

Indiana, Bloomington & Western.—Mr. B. Warren has been appointed Master Mechanic. He was recently Master Mechanic and Acting Superintendent of the St. Louis, Alton & Terre Haute Road.

Iowa Pool Commissioner.—The companies in the Iowa Pool have established this office and chosen Mr. George H. Daniels, late General Ticket Agent of the Wabash, to fill it.

La Crosse & Southwestern.—At the annual meeting, Jan. 10, the following directors were chosen: Mons Andersen, Joseph Clark, A. Hirschheimer, James McCord, Alexander McMillan, James S. Medary, Charles McNeil, G. R. Montague, John Ulrich, all of La Crosse, Wisconsin.

Lancaster.—At the annual meeting in Lancaster, Mass., Jan. 17, the following directors were chosen: George W. Howe, S. R. Merrick, George A. Parker, Lancaster, Mass.; A. R. Powers, Bolton, Mass.; F. D. Brigham, Hudson, Mass.; Amory Maynard, Maynard, Mass.; F. W. Warren, Stow, Mass.; C. H. Waters, Groton, Mass.; Robert Codman, Boston.

Lehigh Valley.—At the annual meeting in Philadelphia, Jan. 17, the following were chosen: President, Charles Hartshorne; directors, David Thomas, Ashbel Welch, Wm. L. Conyngham, Ario Pardee, Wm. A. Ingham, George B. Markle, Robert H. Sayre, Harry E. Packer, James B. Blaklee, Robert A. Packer, Elisha B. Willis, Joseph Patterson.

Meadville.—At the annual meeting in Meadville, Pa., Jan. 9, the following were chosen: President, J. J. Shryock; directors, G. W. Delamater, S. B. Dick, A. S. Dickson, A. C. Huidekoper, Walter S. Harper, W. P. Porter, Cyrus Kitchen, S. C. Stratton; Secretary, F. W. Ellsworth; Treasurer, G. W. Delamater. The road is leased to the Pennsylvania Company.

Michigan Central.—Mr. O. W. Ruggles, General Passenger and Ticket Agent, announces the following appointments in his department: Assistant General Passenger and Ticket Agent, Frank I. Whitney; General Eastern Agent, A. J. Harlow; Canadian Passenger Agent, W. E. Wiley; Western Passenger Agent, W. R. Busenbarck; Northwestern Traveling Agent, W. L. Wyand; Northern Traveling Agent, Henry White; City Passenger Agent at Milwaukee, Harry Bradford; Michigan Traveling Agent, Van Dearing; Southwestern Traveling Agent, W. T. Hayes.

Minneapolis & St. Louis.—Mr. Horace A. Towne has been appointed Superintendent of Machinery, and will have charge of all motive power, repair shops and rolling stock. Mr. Towne was recently Division Superintendent on the Northern Pacific.

Monongahela & Youghiogheny.—At the annual meeting in Pittsburgh, Jan. 9, the following were chosen: President, W. C. Quincy; directors, Jacob Henrici, David Hostetter, James I. Bennett, James M. Bailey, Herbert Dupuy, William M. Lyon, Henry Hice.

The same officers were chosen by the *Monongahela & East Shore Company*. Both companies are controlled by the Pittsburgh & Lake Erie.

Mt. Pleasant & Broad Ford.—At the annual meeting in Mt. Pleasant, Pa., Jan. 9, the following were chosen: President, J. B. Washington; directors, Robert Garrett, Samuel Spencer, Mendes Cohen, Hugh Sisson, Charles Webb, Wm. S. Bissell, Wm. Baldwin, G. M. Sorell, H. S. Burgess, O. F. Shupe, A. R. Banning, John B. Jackson; Secretary and Treasurer, Welty McCullough. The road is worked by the Baltimore & Ohio.

Nevada Central.—This company recently elected S. H. H. Clark President; Sidney Dillon, Vice-President; F. W.

Dean, Secretary and Treasurer. It is controlled by the Union Pacific.

New York, Ontario & Western.—At the annual meeting in New York, Jan. 18, the following directors were chosen: Edward F. Winslow, Horace Porter, Charles F. Woerishoffer, Henry Villard, Henry Amy, Frederick Butterfield, William Adams, Thomas C. Clarke, Theodore Houston, Conrad N. Jordan, George B. Greer, Charles J. Canda, John L. Inslet.

New York, Pittsburgh & Chicago.—At the annual meeting in Pittsburgh, Jan. 9, the following were chosen: President, James S. Negley, Pittsburgh; directors, Jas. S. Robinson, Kenton, O.; L. Scott, Waynesburg, O.; D. W. C. Carroll, N. E. Collins, W. N. Dibble, Wm. E. Schmertz, Pittsburgh; John R. McPherson, Metuchin, N. J.; Delos E. Culver, Charles Siedler, Jersey City; Wm. A. Cole, Henry Day, Wm. B. Scott, New York.

New York, West Shore & Buffalo.—At the annual meeting in New York, Jan. 13, the following directors were elected: Horace Porter, John J. McCook, H. Victor Newcomb, Michael P. Grace, R. T. Wilson, Henry K. McHarg, Charles J. Canda, George G. Nevers, J. B. Page, John L. Nisbel.

Norfolk & Western.—At the annual meeting in Norfolk, Jan. 11, the following directors were chosen: J. B. Whitehead, Norfolk, Va.; J. Arthur Johnston, Petersburg, Va.; U. L. Boyce, Boyceville, Va.; Clarence H. Clark, F. J. Kimball, E. A. Rollins, George F. Tyler, Philadelphia; C. C. Baldwin, George C. Clark, W. B. Isham, Robert B. Minturn, H. Victor Newcomb, C. D. Wood, New York.

North River Construction Co.—At the annual meeting in New York, Jan. 13, the following directors were chosen: Edward F. Winslow, Henry Villard, George M. Pullman, Charles F. Woerishoffer, Wm. Adams, Thos. C. Clarke, Conrad N. Jordan, Howard Mansfield, Henry J. Cullen, Jr.

Oriental Construction Co.—This company has been organized in Denver, Col., with the following officers: President, G. M. Dodge; Vice-President, A. L. Hopkins; Secretary, Frank W. Baldwin.

Pennsylvania Company.—Mr. Philip Bruner is appointed Superintendent of the Cleveland & Pittsburgh Railroad, with office in Wellsville, O., in place of Mr. John Thomas, who has gone to the Baltimore & Ohio.

Philadelphia & Reading.—At the annual meeting last week the following were chosen: President, Franklin B. Gowen; Managers, J. B. Lippincott, Henry Lewis, I. V. Williamson, Eckley B. Coxe, Edward C. Knight, Joseph B. Altomus; Treasurer, Samuel Bradford; Secretary, Albert Foster. These candidates were chosen by a vote of 270,984 shares to 222,617, except Mr. Bradford, who had a unanimous vote. A fuller account of the meeting will be found on another page.

Philadelphia & Reading Coal & Iron Co.—Mr. Francis P. Kaercher has been appointed Secretary in place of Albert Foster, chosen Secretary of the railroad company. Mr. J. M. Wiestling is appointed Auditor, to succeed Mr. Kaercher.

Portland & Ogdensburg.—At the annual meeting in Portland, Jan. 17, the following directors were chosen: Samuel J. Anderson, J. P. Baxter, Francis Fessenden, Horatio N. Jose, W. F. Milliken, R. M. Richardson, J. S. Ricker, Willard W. Thomas, Jr., Samuel Waterhouse, Portland, Me.; Joel Eastman, Conway, N. H. The Board re-elected Samuel J. Anderson President.

Richmond & Allegheny.—Mr. George W. Agee has been appointed Superintendent of the Allegheny Division in place of Samuel L. Southard, resigned.

Richmond & Danville.—The board has elected A. S. Buford President; T. M. Logan, First Vice-President; T. M. R. Talcott, Second Vice-President; Joseph Ryan, Third Vice-President.

St. Louis, Keokuk & Northwestern.—Mr. J. H. Best, Jr., heretofore General Freight Agent, is appointed General Ticket Agent also, with office in Keokuk, Iowa.

St. Louis, Vandalia & Terre Haute.—At the annual meeting in Greenville, Ill., Jan. 10, the following directors were chosen: Thomas D. Messler, J. N. McCollough, Wm. Shaw, W. R. McKee, R. L. Dulaney, W. S. Smith, A. G. Henry, Charles H. Seydt, J. S. Peers. The board re-elected Thomas D. Messler, President; Williamson Plant, Secretary; W. H. Barnes, Treasurer. The road is leased to the Terre Haute & Indianapolis Company.

St. Paul, Minneapolis & Manitoba.—Mr. H. C. Ives has been appointed Assistant General Manager in place of Mr. A. Manvel, recently promoted to be General Manager. Mr. Ives is a civil engineer by profession, and served as such on the Northern Pacific, the Missouri Pacific and the Minneapolis & St. Louis. For some time past he has been Secretary to Vice-President Hill, of his present road.

Mr. C. C. Wrenshall, with office at St. Paul, is appointed Master of Road, having in charge the roadway, bridges, buildings and water supply of the line. From and after Jan. 15, road-masters, bridge and building foremen, and tankmen report to and take their orders from him, and forward to his office all requisitions for supplies.

Silver Lake.—At the annual meeting in Perry, N. Y., Jan. 10, the following directors were chosen: Samuel L. Coapin, Luther Chapin, Henry N. Page, George Tomlinson, Rufus H. Stedman, Isaac C. Rodgers, Alpheus S. Simmons, Nathaniel Seymour, James Wyckoff, David Andrus, Austin W. Toan, Randall W. Brigham, Charles Noble.

Springfield, Effingham & Southeastern.—The officers of this company are: President, John B. Lyon; Vice-President, John S. Cooper; Secretary, W. C. Lyon; Treasurer, Thomas B. Rice. Office in Chicago.

Smyrna & Delaware Bay.—At the annual meeting in Smyrna, Del., last week, the following directors were chosen: R. W. DeForrest, Chas. Gould, J. R. Nicholson, H. C. Douglass, J. H. Hoffecker, N. F. Wilds, J. F. Bingham. The following officers were elected: John F. Bingham, President; R. W. DeForrest, Secretary; H. C. Douglass, Treasurer; L. D. Bruin, Chief Engineer; John R. Nicholson, Attorney.

Toledo, Ann Arbor & Grand Trunk.—Mr. C. C. Dodge has been appointed Master Mechanic, with office at Ann Arbor, Mich. He was recently on the Michigan Central.

Wabash, St. Louis & Pacific.—The following is the official circular announcing the changes in management lately noted; it is dated Jan. 9:

"The following changes have this day been made in the management of this company's lines, and will go into effect on and after the 15th inst.

"The office of General Manager will be abandoned. Mr. John C. Gault has been appointed Second Vice-President, and will take charge of the traffic of the company. The freight and passenger departments will report directly to him.

"Mr. James F. How has been appointed Third Vice-President, retaining his duties as Secretary, and having supervision of the records, supply and accounting departments.

"The offices of General Superintendent of Eastern Division, Western Division and Chicago & Iowa Division will be abandoned and Col. Robert Andrews will assume the duties of General Superintendent of the entire lines of the company, with headquarters at St. Louis.

"Mr. W. F. Merrill has been appointed Assistant General Superintendent, with headquarters also at St. Louis.

"The office of General Ticket Agent will be abandoned. Mr. H. C. Townsend taking charge of that department in addition to his present duties as General Passenger Agent.

"The office of Superintendent of Freight Traffic will be abandoned. Mr. A. C. Bird being appointed General Freight Agent and Mr. M. Knight First Assistant General Freight Agent."

Western Railroad Association.—At the annual meeting in Chicago, Jan. 10, the following directors were chosen: B. F. Ayer, Illinois Central; B. C. Cook, Chicago & Northwestern; A. L. Osborn, Michigan Central; T. J. Potter, Chicago, Burlington & Quincy; T. F. Withrow, Chicago, Rock Island & Pacific; T. B. Blackstone, Chicago & Alton; Charles Paine, New York, West Shore & Buffalo; C. W. Rogers, St. Louis & San Francisco; S. S. Merrill, Chicago, Milwaukee & St. Paul; F. de Funiak, Louisville & Nashville; S. R. Callaway, Chicago & Grand Trunk; John C. Brown, Missouri Pacific.

The board elected officers as follows: President, B. F. Ayer; General Counsel, George Payson; Secretary and Treasurer, J. H. Raymond; Executive Committee, B. F. Ayer, B. C. Cook, A. L. Osborn, T. B. Blackstone, T. F. Withrow.

Western Society of Engineers.—At the annual meeting in Chicago, Jan. 8, the following officers were chosen: President, W. S. Baker; First Vice-President, D. C. Cregier; Second Vice-President, K. P. Booth; Secretary, L. P. Morehouse; Treasurer, Charles Fitzsimmons; Librarian, John W. Weston; Trustee for three years, W. S. McHarg.

Wheeling & Lake Erie.—General Manager J. S. Oliver announces the following appointments: C. V. McKinlay, General Freight and Passenger Agent; W. A. Gardner, Superintendent of Telegraph and Train-Master; L. James, Superintendent of Machinery and Car Departments; W. W. Graham, Cashier and Paymaster. The offices are now in Norwalk, O., but will shortly be removed to Toledo.

Worcester & Nashua.—At the annual meeting in Worcester, Mass., Jan. 12, the following directors were chosen: Charles Holman, Nashua, N. H.; F. H. Dewey, F. H. Kinnicut, Stephen Salisbury, J. Edwin Smith, E. B. Stoddard, Charles S. Turner, Samuel Woodward, Worcester, Mass.; H. N. Bigelow, Clinton, Mass. The Board elected Charles S. Turner President and Manager; T. W. Hammond, Clerk and Treasurer; George W. Hurlburt, Superintendent.

PERSONAL.

—Mr. A. Y. Stokes has resigned his position as Vice-President of the Richmond & Danville Company.

—Mr. C. B. Cox, Train Dispatcher of the Galena Division of the Chicago & Northwestern road, has resigned his position and will go to Colorado.

—Mr. George H. Daniels, late General Ticket Agent of the Wabash, St. Louis & Pacific road, has been offered the position of Commissioner of the Iowa Pool, and has accepted it.

—A report has gained considerable currency that the position of President of the Central Railroad Company, of New Jersey, has been offered to Hon. Theodore Runyon, now Chancellor of New Jersey, and that he has the offer now under consideration.

—Mr. Franklin D. Childs has resigned his position as Superintendent of the Hinkley Locomotive Works in Boston, to take charge of the new locomotive works in Chicago. Mr. Childs is well known as a mechanical engineer of ability and of wide experience in locomotive construction.

—Hon. Webster Wagner, President of the Wagner Sleeping Car Co., was killed in the accident on the New York Central & Hudson River road on the evening of Jan. 13. When last seen Mr. Wagner was about to pass from one of the wrecked cars to the other, and it seems probable that he was caught between the two cars and crushed to death. His body was burned almost to an undistinguishable mass, and was identified only by some articles found upon or by it. Mr. Wagner was born at Palatine Bridge, N. Y., Oct. 2, 1817.

At an early age he was apprenticed to his elder brother James as a wagon-maker. After becoming a first-class workman he was taken into partnership by his brother. The firm was unsuccessful, and after the partnership was dissolved and the indebtedness settled, the future Senator obtained a situation as station agent in his native town. This position he occupied from 1843 until 1860, when he retired from it to direct his attention to handling grain and other farm products. His new business, which he had established while he was still station agent, gave him time and means to put into execution an idea that he had long cherished. He was always a keen observer and a constant thinker, and as he watched the long through trains of comfortless cars which went by his station door, the thought that gave him his fortune came into his mind. He saw that sooner or later the traveling public would require sleeping cars, and he set at work to devise plans for this innovation in railroad travel. Four cars were constructed at a cost of \$3,200 each, and commenced running on the New York Central Sept. 1, 1858. The system of ventilation was found to be imperfect. The ventilators were opposite the sleepers, and when the trains were running it was necessary to keep them closed. To remedy the defect the elevated roof was devised by Mr. Wagner. This proved to be so useful an improvement that it was applied not only to sleeping cars, but to ordinary passenger cars. On Aug. 20, 1867, he put in operation his first drawing-room car for day travel. Elegance of appointment was made the feature of both the night and day Wagner cars, and the business became an established success. He had early secured the interest and co-operation of Commodore Vanderbilt, and with abundant capital to aid him, his operations were rapidly extended. Mr. Wagner was chosen to the New York Assembly in 1871 and to the Senate the following year, and has been re-elected to the Senate each term until the present time. He had accumulated a very large fortune, and owned a magnificent place at Palatine Bridge, as well as a house in New York city. He was buried at Palatine Bridge.

TRAFFIC AND EARNINGS.

A Colorado Pool.

The roads from Chicago and St. Louis westward, interested in the Colorado traffic, at a meeting in Chicago, Jan. 11, agreed to form an organization to divide the business which is carried by all the roads in the Southwestern Association and

also by the Chicago & Northwestern. The latter insisted that any member might withdraw on giving 30 days' notice, and this point was conceded. Two great divisions of the roads were made, the "Northern Division," including those from Chicago, to have 65 per cent. of the business, and the "Southern Division," including roads from St. Louis, the other 35 per cent. Each division was left to divide its traffic among its several members, the percentages to be submitted to arbitration if the roads cannot agree. It is reported that the traffic of the Northern Division will be divided equally among the five roads in that division—the Chicago & Northwestern, the Chicago, Burlington & Quincy, the Chicago, Rock Island & Pacific, the Chicago & Alton and the Wabash. The Burlington, the Rock Island and the Wabash carry this freight both by way of Omaha and by way of Council Bluffs; the Northwestern only by way of Omaha, the Alton only by way of Kansas City. Rates, which had been very low, were restored last Monday.

The management of the pool will be by an Executive Committee, consisting of Messrs. Hughtitt, of the Northwestern; Potter, of the Burlington; Cable, of the Rock Island; McMullin, of the Alton; Gault, of the Wabash; Talmage, of the Missouri Pacific, and Carson, of the Hannibal & St. Joseph, with J. W. Midgley as Commissioner.

Railroad Earnings.

Earnings for various periods are reported as follows:
Year ending Dec. 31:

	1881.	1880.	Inc. or Dec.	P. c.
Ala. Gt. Southern	\$787,518	\$644,331	I.	\$143,187 22.2
Ches. & Ohio	413,621	413,621	I.	11,172 2.7
E. Tenn., Va. & Ga.	2,649,811	2,452,153	I.	197,658 7.2
C. Mt. V. & Del.	424,276	429,508	D.	5,232 1.2
H. E. & W. Tex.	165,728	99,843	I.	65,885 66.0
Kan. C. Ft. S. & G.	1,547,259	1,206,724	I.	340,535 28.2
Mo. Kan. & Tex.	8,019,743	6,127,217	I.	1,892,526 31.0
Mo. Pacific	6,783,327	5,420,579	I.	1,362,748 25.0
Norfolk & West.	2,257,192	2,064,195	I.	192,997 9.4
Or. Ry. & Nav. Co.	4,391,681	3,338,008	I.	1,053,673 31.7
Net earnings	2,196,171	1,782,571	I.	413,600 23.0
St. L., I. M. & So.	7,319,744	6,263,597	I.	1,056,147 16.8
Texas & Pacific	3,921,599	2,715,548	I.	1,206,051 44.5

Eleven months ending Nov. 30:

Boat & N.Y. Air Line	\$265,259	\$261,682	I.	\$3,577 1.3
Net earnings	139,454	144,283	D.	7,829 5.4
Bur. Ced. Rap. & No.	2,026,225	1,860,065	I.	166,160 8.9
Net earnings	563,468	655,548	D.	92,080 14.0
Ches. & Ohio	2,503,200	2,506,700	I.	47,900 1.9
Net earnings	807,103	608,102	I.	199,001 32.7
Cleve., Mt. V. & Del.	386,302	394,051	D.	7,749 2.0
Net earnings	45,936	78,148	D.	32,212 61.3
Des. M. & Ft. Dodge	366,246	288,030	I.	78,216 27.1
Net earnings	26,316	134,775	D.	108,459 80.3
Mem., Pad. & No.	221,096	195,803	I.	25,293 12.9
Net earnings	57,405	30,929	I.	17,476 43.7

Ten months ending Oct. 31:

Cairo & St. L.	\$346,210	\$335,562	I.	\$10,648 3.2
Net earnings	50,606	70,503	D.	19,897 28.0
Paducah & E'town	442,968	328,991	I.	113,977 34.6
Net earnings	112,681	81,385	I.	31,296 38.6

Month of October:

Mar., Hough. & Ont.	\$101,736	\$90,836	I.	\$10,900 12.0
Net earnings	66,298	66,045	I.	11,653 21.2

Month of November:

Boat & N.Y. Air Line	\$24,897	\$22,390	I.	\$2,507 11.4
Ches. & Ohio	235,585	240,795	D.	5,210 2.1

Month of December:

Ala. Gt. Southern	\$86,912	\$61,275	I.	\$25,637 42.0
Cairo & St. Louis	41,396	37,497	I.	3,899 9.3
Ches. & Ohio	230,471	152,475	I.	77,996 33.8
C. Mt. V. & Del.	37,974	35,547	I.	2,427 6.7
E. Tenn., Va. & Ga.	302,957	302,525	I.	432 0.1
H. E. & W. Tex.	21,841	10,527	I.	11,314 107.7
Kan. C. Ft. S. & G.	152,796	127,340	I.	25,456 20.0
Mo. Kan. & Tex.	790,950	619,385	I.	171,565 27.7
Mo. Pacific	688,541	459,676	I.	228,865 49.8
Or. Ry. & Nav. Co.	373,760	157,574	I.	216,186 137.1
St. L., I. M. & So.	709,498	650,051	I.	59,447 8.0
Texas & Pacific	381,218	301,858	I.	79,360 20.4

First week in January:

Chl. & Alton	\$137,088	\$107,000	I.	\$30,088 28.1
Chl. & Eastern Ill.	32,949	29,980	I.	2,969 9.9
Chl. & Gd. Trunk	24,764	21,818	I.	2,946 13.4
Chl. Mil. & St. P.	326,000	241,050	I.	84,950 35.4
Chl. & N. W.	346,400	261,700	I.	84,700 32.5
Col. H. Val. & Tol.	61,527	50,527	I.	11,000 18.0
Great Western	88,596	86,770	I.	1,826 2.0
Hann. & St. Jo.	31,120	30,081	D.	4,961 13.8
Louisv. & Nashv.	201,640	159,900	I.	41,740 26.1
St. P. Minn. & Man.	77,075	58,593	I.	18,482 31.3
Wab., St. L. & P.	291,565	183,132	I.	108,433 59.2
Denver & R. G.	\$109,935	\$90,078	I.	\$19,857 83.1

Grain Movement.

For the week ending Jan. 7 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been as follows, in bushels, for the last five years:

Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1878	1,452,608	1,112,056	2,764,984
1879	2,938,586	1,183,148	2,147,844
1880	3,897,046	1,370,697	3,691,855
1881	2,967,690	2,036,483	2,053,534
1882	2,719,059	1,515,064	1,980,185

The receipts of the Northwestern markets are the smallest since 1878; the shipments smaller than last year but larger than in any earlier year. The receipts of the Atlantic ports are nearly 40 per cent. less than last year, when they were smaller than in the three preceding years. Compared with previous weeks, the Northwestern receipts are a little larger than the week before (holiday week), but smaller than in any other of the winter; the Northwestern shipments were 114,000 bushels less than the week before and smaller than in any week in 1881 except one, while the Atlantic receipts are the smallest that have been reported in a record that goes back to June, 1873, with the single exception of those for the week ending Jan. 20, 1877, which were 42,713 bushels less.

Of the Northwestern receipts, Chicago had 42.6 per cent., St. Louis 20.5, Peoria 15.8, Milwaukee 13.3, Toledo 4.5, Detroit 2.3, and Cleveland 1 per cent. The Chicago receipts are much larger than the week before (when they were extraordinarily small), and its percentage equal to its December percentage. At Milwaukee there was a large decrease, and some decrease at all places but Chicago.

Of the very small Atlantic receipts New York had 46.1 per cent., Boston 20.8, Baltimore 11.7, Philadelphia 10.9, New Orleans 7.3, Portland 2.6, and Montreal 0.7 per cent. At every place they were very small.

Exports from Atlantic ports for the week ending Jan. 11 were 61,777 barrels of flour and 1,128,497 bushels of grain, against 189,310 barrels of flour and 1,800,826 bushels of grain in the corresponding week of last year. There were no exports from New Orleans in the first week of January. Of the total exports that week 56.4 per cent. were from New York, 20.8 from Baltimore, 9 from Boston, 8.4 from Philadelphia, and 5.4 from Portland; but of the flour, 57 per cent. went from New York, 29 from Boston, 7.8 from Portland and 5.7 from Baltimore.

For the week ending Jan. 14 receipts and shipments at Chicago and Milwaukee were:

	Receipts.		Shipments.	
	1881.	1882.	1881.	1882.
Chicago.....	2,056,757	1,279,110	1,458,769	1,517,820
Milwaukee.....	473,902	418,950	261,744	112,506
Both.....	2,530,659	1,698,060	1,720,513	1,630,326

The receipts of the two places are nearly 50 per cent. more this year than last (when snow blockades interrupted traffic), and the shipments 5½ per cent. more.

Receipts at four Eastern ports the week ending Jan. 14 were:

Bushels.	N. Y.	Boston.	Phila.	Balto.	Total.
1881.....	805,835	236,155	161,300	160,038	1,363,328
1882.....	818,010	411,980	220,185	420,268	1,870,453
1880.....	1,216,221	237,067	345,400	423,441	2,222,129
P. c. of total:					
1882.....	59.1	17.3	11.8	11.8	100.0
1881.....	43.5	21.9	12.5	22.4	100.0
1880.....	54.7	10.7	15.5	19.1	100.0

New York's proportion of the receipts is larger than in 1881 or 1880, Philadelphia's and Baltimore's smaller; Boston's much less than last year, but much more than in 1880.

Wheat shipments from San Francisco for the six months of the California crop year from July 1 to Dec. 31 were, in bushels:

	1881.	1880.	Increase.	P. c.
Wheat.....	21,240,211	10,262,038	10,978,173	107.0

The bulk of the shipments were to Great Britain, a few cargoes going to Havre and Antwerp.

Flour exports for the half-year were: 1881, 423,802; 1880, 300,138; 1879, 248,680 barrels.

Shipments of California barley by water for the half-year were, in centals: 1881, 75,610; 1880, 463,621; decrease, 388,011 centals, or 83.7 per cent. Shipments of barley east by rail for the five months to Nov. 30 were 118,134 centals.

Coal Movement.

Coal tonnages for the week ending Jan. 7 are reported as follows:

	1882.	1881.	Increase.	P. c.
Anthracite.....	371,298	305,298	66,000	21.9
Semi-bituminous.....	75,044	.....	.....	.....
Bituminous, Pa.....	48,673	.....	.....	.....
Coke, Pa.....	45,954	.....	.....	.....

It is stated that the anthracite companies have agreed to stop mining for six days in January—that, is for two half weeks—and also, if stocks at shipping points continue to increase, for three days of each week in February.

The official accountant's statement of anthracite tonnages for December and the year, differing somewhat in form from the weekly statements, is as follows:

	1881.	1880.	Year.	1881.	1880.
Phila. & Reading.....	633,116	407,089	6,940,283	5,933,923	.....
Lehigh Valley.....	595,024	339,553	5,721,870	4,394,532	.....
Central of N. J.....	406,837	276,788	4,085,423	3,470,142	.....
Del. Lacka. & West.....	425,914	310,151	4,388,969	3,550,348	.....
Del. & H. Canal Co.....	360,731	213,069	3,211,496	2,674,705	.....
Penn. R. R. Co.....	180,532	140,975	2,211,364	1,864,031	.....
Penn. Coal Co.....	142,163	106,018	1,475,380	1,138,467	.....
N. Y., L. E. & West.....	40,469	46,474	465,231	411,044	.....
Total.....	2,724,726	1,878,857	28,500,016	23,437,242	.....

Increase for the month, 845,869 tons, or 31.0 per cent.; for the year, 5,062,774 tons, or 21.6 per cent. For the month all the companies show gains except the New York, Lake Erie & Western; for the year all show increases, the largest proportionally being those of the Lehigh Valley, the Pennsylvania Coal Co., and the Delaware, Lackawanna & Western.

The stock of coal on hand at tidewater shipping points Dec. 31 was 467,024 tons, against 392,315 tons on Nov. 30, and 500,273 tons on Dec. 31, 1880.

The total production in 1881 was divided as follows:

	Tons.	Per cent. of total.
Wyoming Region.....	13,951,383	48.96
Lehigh Region.....	5,294,076	18.58
Schuylkill Region.....	9,253,958	32.46
Total.....	28,500,017	100.00

The competitive tonnage, including all coal which, for final consumption or in transit, reached any point on the Hudson River or the bay of New York, or which passed out of the Capes of the Delaware, except pea and dust, was as follows: 1881, 12,169,030; 1880, 10,088,159; increase, 2,080,871 tons, or 20.6 per cent.

During the year ending Dec. 31, 1881, the shipments from the pools on the Monongahela River above Pittsburgh were 86,251,690 bushels coal and 3,780,700 bushels coke; total, 90,035,390 bushels; total, 1880, 89,377,150 bushels; increase, 658,210 bushels, or 0.7 per cent. The tolls paid on this to the Monongahela Navigation Co. in 1881 were \$216,908.10.

Actual tonnage passing over the Pennsylvania & New York road for the month ending Dec. 31 was as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Anthracite.....	98,950	61,509	I. 37,441	60.9
Bituminous.....	35,948	37,297	D. 1,349	3.6
Total.....	134,898	98,806	I. 36,092	36.5

This company's fiscal year ends Nov. 30, and the tonnage above is for the first month of its new year.

The production of coal from the mines of the Colorado Coal & Iron Co. for the year just closed was as follows, in tons:

	1881.	1880.	Increase.	P. c.
Cañon City mines.....	120,000	107,575	12,425	11.5
Walsenburg.....	68,000	32,106	35,894	112.1
El Moro.....	140,000	81,897	58,103	71.4

Total..... 328,000 221,578 106,422 48.2

About 95,000 tons of the El Moro coal were made into coke last year, against 52,000 tons so used in 1880.

Chicago Live Stock Traffic.

Receipts and shipments of live stock at Chicago for the last two years have been:

	1881.	1882.	Inc. or Dec.	P. c.
Cattle.....	1,546,832	1,382,477	I. 164,355	11.9
Hogs.....	6,470,917	7,059,355	D. 588,438	8.3
Sheep.....	493,822	335,810	I. 158,012	44.1
Shipments:				
Cattle.....	976,460	886,614	I. 89,846	10.1
Hogs.....	1,284,490	1,394,090	D. 109,598	7.8
Sheep.....	249,078	156,510	I. 92,568	59.1

The receipts of cattle have increased every year, with scarcely a single interruption, since the opening of the stock yards in 1865. From 1866 to 1870 the increase was 35.6 per cent.; from 1870 to 1876 it was 106 per cent., and from 1876 to 1881 41 per cent.

Receipts for six successive years have been:

	Cattle.	Hogs.	Sheep.
1876.....	1,086,745	4,190,006	364,095
1877.....	1,039,151	4,025,970	310,240
1878.....	1,081,068	6,300,634	310,420
1879.....	1,215,732	6,448,340	325,119
1880.....	1,382,477	7,059,355	335,810
1881.....	1,546,832	6,470,917	493,822

From 1876 to 1881, while the cattle receipts increased

41 per cent., the hog receipts increased 54½ per cent., and the sheep receipts 35½ per cent. The cattle receipts, it will be seen, were nearly stationary in the first three years; but the hog receipts were nearly as great in 1878 as last year. The increase in hog-packing west of the Mississippi might be supposed to account for the check in the increase in hog receipts; but, in reality, Chicago packs fully as large a proportion of all the hogs packed in the West as it ever did. The recent great increase in cattle receipts (43 per cent. since 1878) is doubtless due to the vast increase in grazing on the plains beyond the Missouri.

Kansas City Live Stock Receipts.

The report of the Kansas City Stock Yards gives the receipts of the past two years as follows:

	1881.	1880.	Increase.	P. c.
Cattle.....	286,134	244,281	41,853	17.2
Hogs.....	1,015,447	676,848	338,599	50.0
Sheep.....	79,848	51,004	28,844	56.6

These receipts of cattle may be compared with those of Chicago, which for 1881 were 1,546,832 head of cattle, 6,470,917 hogs, and 493,822 sheep. Chicago has a much larger live stock traffic than any two or three other places, and the business of Kansas City, which has grown up within a few years comparatively, is astonishingly large, and especially its hog receipts. Kansas City is the nearest great market for cattle to more than half of the great grazing plains which extend from the hundredth meridian to the Rocky Mountains and from Texas to Montana, and it is to be expected that it should have a great cattle traffic, but the corn belt west of it is comparatively narrow, and its very large hog receipts are more surprising.

Chicago and Milwaukee Receipts.

For the first two weeks of January receipts have been for four successive years:

	1879.	1880.	1881.	1882.
Chicago:				
Grain, bu.....	3,258,333	3,851,132	2,583,405	3,710,069
Flour, bbls.....	128,310	125,521	219,409	215,18
Hogs, No.....	528,834	216,410	375,168	421,392
Milwaukee:				
Grain, bu.....	955,945	874,938	806,840	920,715
Flour, bbls.....	93,738	81,709	138,296	136,970
Hogs, No.....	82,826	28,104	41,677	37,485

Taking flour and grain together the receipts at both places have been:

	1879.	1880.	1881.	1882.
Bushels.....	5,213,494	5,658,605	4,900,917	6,215,183

Thus not only are the receipts much larger this year than last (when they were limited by snow blockades), but they are larger than in 1880 and 1879 also. Shipments, however, are quite moderate, though rates were never before so low in winter, and stocks are accumulating.

The receipts were especially large in the second week of January. In each of the two weeks they have been:

	1879.	1880.	1881.	1882.
Week to:				
Jan. 7.....	2,580,666	3,547,076	2,641,057	2,700,258
Jan. 14.....	2,637,828	2,111,529	2,358,860	3,514,925

The last week's receipts this year are 49 per cent. more than last year, and 33½ per cent. more than in 1879.

Wheat in Illinois.

The Illinois Department of Agriculture reports the acreage of winter wheat sown in that state as 12 per cent. less than last year. In the three divisions of the state the acreage and average condition are reported as follows:

	1882.	1881.	P. c. of D.	1882.	1881.
North. Div. (33 cos.).....	49,916	70,128	14.7	104	85
Cent. Div. (35 cos.).....	1,088,244	1,215,842	12.1	103	87
South. Div. (34 cos.).....	1,525,212	1,639,698	7.0	108	93
Total.....	2,673,372	2,951,668	9.3	106	90

The condition of the crops at this season is by no means a guide to its condition at harvest. For instance, Southern Illinois, where the crop was but 7 per cent. below an average in January last year, actually yielded but about 25 per cent. of an average crop. But the good condition at this season insures the possibility of a better crop than was possible at this time last year.

The very considerable decrease of 9½ per cent. in acreage is noticeable.

Tickets from Kansas City East.

At a meeting of the railroads carrying passengers from Kansas City to St. Louis and Chicago, held in Chicago Jan. 11, the following agreement was adopted:

"For the maintenance of equal rates to all competitive points, we hereby pledge ourselves to observe the following agreement, to take effect at once:

"The net rate from Kansas City to Chicago shall be \$7, and from Kansas City to St. Louis \$4, these rates to apply only on the usual rebate tickets, on which \$14.80 shall be the amount charged for Chicago and \$8.50 for St. Louis, except that on account of charity on orders from the Mayor of Kansas City only, and to theatrical parties of five or more persons, on one solid ticket we may sell tickets limited to one day after date of issue at the above net rate.

"To Jacksonville and Springfield the rate shall be \$7 for tickets limited to one day after date of issue.

"To all points beyond Chicago, St. Louis, Jacksonville or Springfield the rates for limited tickets shall be made by adding \$7 to the rate from Chicago, Jacksonville or Springfield, or \$4 to the rates from St. Louis, whichever makes the lowest.

"Unlimited tickets to all competitive points shall not be sold at less than the rates named for such tickets in the Missouri River rate-sheet.

"On any ticket or tickets sold at less than the rates agreed on, or on which a larger limit is given than is provided for in agreed tariffs, must be redeemed by the agent of the road selling the ticket at twice the agreed rate, it being understood that twice the agreed rate on a Chicago rebate ticket means \$29.60, and on a St. Louis ticket \$17. It is, however, understood that in the event of a ticket being sold by a broker or anybody else at less than the agreed rate, and the agent of the road who sold such ticket being able to establish that the agreed rate was paid, or had no arrangement to pay any commission or rebate of any kind on such a ticket, and that he could not possibly control the subsequent sale, the penalty as far as redemption of ticket is concerned shall be only the amount of the agreed rate, but in such an event we all hereby agree to withdraw all patronage from and to refuse to allow any broker causing a violation of this agreement to handle our tickets from thirty days after such offense is proven.

"As a pledge of our intentions to faithfully carry out every provision of this agreement and to facilitate its operation we have this day deposited \$100 each in the bank at Kansas City, out of which penalties for violation of this agreement are to be paid over by said bank only on the order of all the parties to this agreement, it being understood that all investigations or breaches of this agreement are first to be passed upon by the Kansas City representatives of lines parties to this agreement, but a majority decision of these agents may be appealed by either the plaintiff or the defendant to its General Passenger and Ticket Agents interested, and the majority decision of the latter may again be appealed by arbitration, the plaintiff to select one arbitrator, the defendant to select one, and

these two arbitrators to select a third, the majority decision of the three so selected to be final. Upon the imposition of a penalty under this clause either by the local or General Passenger Agents it shall be paid or the appeal to be taken presented at once. We further agree that no passes shall be given by us to secure passengers, and, if the fact of a pass being given to secure any passenger business is established to the satisfaction of a majority of parties to this agreement, the agent who gave the pass must redeem the same at twice the regular fare between the points for which issued, this clause not to apply to theatrical parties.

"That Mr. Taylor, Compiler of the Missouri River rate-sheet, compile all rate-sheets from Missouri River points used by us.

"This agreement to be in effect from and after Jan. 15, 1882."

The agreement was signed by James Chariton, Chicago & Alton; France Chandler, Missouri Pacific; E. St. John, Chicago, Rock Island & Pacific; H. C. Townsend, Wabash, St. Louis & Pacific; S. K. Hooper, Hannibal & St. Joe. Mr. Percival Lowell did not sign the agreement on the ground that the Hannibal & St. Joe controls the Kansas City business of his road.

On motion it was resolved that the ticket agent at the Union Depot at Kansas City shall, upon receipt of an order from any one line to change a rate, immediately notify every other line in interest of the proposed change, and shall not sell at the proposed rate until he has the consent to do so from every other line.

OLD AND NEW ROADS.

Allegheny Central.—This company's road is now completed to Angelica, N. Y., nine miles northeast from the late terminus at Friendship, and about 30 miles from Olean, the western terminus.

Atchison, Topeka & Santa Fe.—This company has begun to run through cars to Denver, its cars passing over the Denver & Rio Grande track between Pueblo and Denver, on the third or standard-gauge rail which has lately been completed.

Atlantic & French Board.—This company has let a contract for the construction of its proposed road from Edgefield, S. C., northward through South and North Carolina to the Tennessee line, to Childs & Oliver, of New York. They agree to complete the line in two years.

Atlantic & Pacific.—The following is announced as the financial plan of this company: First-mortgage bonds are to be issued for \$18,000,000, of which \$1,500,000 will be reserved to cancel the bonded debt upon the Central Division, which has had for some years 35 miles of road in operation in the Indian Territory, and \$1,500,000 will be spent in its extension. The remaining \$15,000,000 will be devoted to the construction of the Western Division to the Pacific coast. As in the case of the first \$10,000,000 subscription, subscribers will have the right to take bonds at par, with a 75 per cent. bonus in income bonds, the company reserving a right to cancel the subscription within a limited time, leaving the subscriber a bonus of 50 per cent. in bonds. The completion of the subscription will be followed by a distribution of \$8,500,000 of the \$40,000,000 capital stock of the company, being equivalent to a second bonus of 50 per cent. to subscribers on the amount of their subscriptions. This stock subscribers will have the right to retain, even should the company cancel their subscriptions. The subscriptions for \$16,500,000 will be open in the first instance in three equal parts of \$5,500,000 to stockholders of the Atchison, Topeka & Santa Fe and of the St. Louis & San Francisco, and to financial agents or bankers' syndicates. Track on the Western Division is reported down on this road to Camp Diablo, Arizona, 24 miles beyond the late terminus at Winslow, 300 miles from the junction with the Atchison, Topeka & Santa Fe at Isleta and 310 miles from Albuquerque.

Baltimore & Potomac.—All the contracts for the grading and masonry necessary to complete the second track between Baltimore and Washington have been let. The work is to be finished by June 1 next.

Buffalo, Pittsburgh & Western.—This company has concluded a contract for the use of the Philadelphia & Erie road from Irvinton, Pa., to Warren, six miles, for its extension from Irvinton to Warren. Tracklaying is now in progress from Warren toward Salamanca, most of the grading being completed, and the rails are reported down for four miles from Warren. Work is being pushed as fast as possible.

California Southern.—During the month of December 11 miles of track were laid on this road, bringing the end of the track to a point 47.4 miles northward from the starting point on San Diego Bay.

A circular just issued by this company states that the distance from San Diego to a junction with the Southern Pacific Railroad at or near Colton, by the route adopted by the company, is about 132 miles; and it is expected that the connection will be made about April 1, 1882. To provide funds to build this additional mileage, and also to build machine shops and other important terminal facilities at National City, the directors have resolved to raise the sum of \$765,000. The subscription for this purpose is now offered to the holders of blocks under circular No. 1 of the company, each holder of three blocks of the old subscription being entitled to subscribe for one block of the new. All subscriptions must be in sums of \$1,100, or multiples thereof, on or before Jan. 25, 1882. For \$1,100 in cash, payable as the same may be assessed by the board of directors, but not more than 20 per cent. in any one month, the company will deliver to subscribers 10 shares of the full-paid capital stock of the company and \$1,000 in its first-mortgage bonds, and 1½ shares of the full-paid capital stock of the San Diego Land & Town Company, the last-mentioned stock to be delivered when the same shall be received by the railroad company in exchange for that part of its land subsidies now held in trust for its benefit.

Canadian Pacific.—The directors have decided not to build the Sault Ste. Marie Branch at present, but to connect the Western Division with other lines by a service of fast steamboats from Thunder Bay to Algoma.

Catskill Mountains.—This road has begun running trains to Stony Clove, N. Y., four miles beyond the late terminus at Edgewood, and 12½ miles from the junction with the Ulster & Delaware road at Phenicia. Four miles remain to reach Hunter, and this section is to be finished before the summer travel begins.

Central, of New Jersey.—The Lehigh & Wilkesbarre Coal Company, controlled by this company, has passed out of the hands of the receivers, they having been formally discharged by the United States Circuit Court.

It is reported that the arrangements are being made as fast as possible to close up the receivership of the Central Railroad Company. This has been reported several times before, but there now seems reason to believe that the receivership is drawing to an end.

It is reported that large purchases of the company's stock have been made in the interest of the Baltimore & Ohio, and

that Mr. Garrett intends to secure control of the company. His object, of course, is to control the line between New York and Philadelphia in his interest.

Central Vermont.—In the Langdon suit to enforce the sale of the Vermont Central and the Vermont & Canada roads to satisfy the trust debt, the Vermont Supreme Court has denied a petition to have the appeal set aside and the case remanded to Chancellor Royce for a new trial. The Court ordered that the appeal stand and the case be set for trial before the Supreme Court.

Chicago, Burlington & Kansas City.—The following circular has been issued by Mr. Elijah Smith, President of this company:

"The Burlington & Southwestern Railway and its property having been sold under decrees of foreclosure, has been reorganized under the name of the Chicago, Burlington & Kansas City Railway Company, which company has this day taken possession of the road and property, and will hereafter control and operate the same.

"All accounts and transactions occurring on and after this date (Jan. 1, 1892), will be kept in the name of the Chicago, Burlington & Kansas City Railway Company, at Keokuk, Iowa.

"All accounts and settlements for business done in the name of Elijah Smith, Receiver of the Burlington & Southwestern Railway Company, up to and including Dec. 31, 1891, will be adjusted and settled as heretofore, with the Receiver, and reports and remittances will be made as formerly to and by the respective officers of the Receiver at Burlington.

"It being desirable to close the accounts of the receivership as rapidly as possible, all companies and individuals having business with the Receiver are respectfully requested to make reports and settlements promptly."

The new company is controlled by the Chicago, Burlington & Quincy, and the road will be worked in the interest of that company.

Chicago, St. Paul, Minneapolis & Omaha.—The new shops of this company at St. Paul, Minn., are now finished and ready for business. The shops include a round house, with stalls for 20 engines; a machine and erecting shop, 120 by 250 ft.; a smith shop, 60 by 120 ft.; a tin and copper shop, 60 by 120 ft.; engine and boiler room, 54 by 60 ft., and numerous small buildings used for office, store-rooms, wash-rooms, etc.

The buildings are of brick, and will be well furnished with the necessary tools and machinery. A car shop will be added to these buildings in the spring.

Cincinnati, New Orleans & Texas Pacific.—This company makes the following statement of the operations of the Cincinnati Southern road from the beginning of the lease to Dec. 31, a period of two months and 19 days:

Gross earnings	\$612,096
Expenses (53.11 per cent.)	320,118
Net earnings	\$291,978
Rental and sinking fund paid trustees	\$170,345
Sinking fund of company	30,000
Dividend, 1½ per cent.	45,000
	251,345

Surplus not divided \$40,633

The business shows a very remarkable increase over the corresponding period of last year.

Clinton & Wilmington.—It is proposed to build a railroad from Clinton in Sampson County, N. C., southward to Point Caswell on the Cape Fear River, whence connection will be made with Wilmington by steamboat. The road will be about 40 miles long.

Denver & Rio Grande.—The third rail, for standard gauge, is now completed from Denver, Col., to the junction with the Atchison, Topeka & Santa Fe at South Pueblo, 120 miles. The company has purchased some standard-gauge engines, to be used to haul the trains of the Santa Fe road between Pueblo and Denver.

Harrisburg & Potomac.—This road is now completed to Leesburg, Pa., two miles westward from the late terminus at Jacksonville, and 23 miles from the junction with the Mechanicsburg & Dillsburg Branch of the Cumberland Valley road. About four miles remain to complete the road to Shippensburg, where connection will be made with the Baltimore & Cumberland Valley road.

Houston & Texas Central.—This company has agreed to accept certain offers made by the people on the line, and to build a branch line from Ennis, Tex., northeast to Kaufman and Terrell. It is reported that this branch is the beginning of a new line to the Red River or the Louisiana line, with the ultimate object of securing an outlet to St. Louis independent of the Gould lines, probably by a connection with the St. Louis & San Francisco road.

Indiana, Bloomington & Western.—This company has begun a survey for an extension of the Indianapolis, Decatur & Springfield road, which it now works, to St. Louis. Several lines are to be run.

Lehigh Valley.—The Buffalo Creek Company, through which organization this company holds its terminal property in Buffalo, recently leased the greater portion of the Tift farm, which was purchased by the Lehigh Valley Company, for 50 years at an annual rental of \$20,000. Jan. 14 it let the contract for proposed improvements, which are to cost \$1,000,000. The intention of the company is to construct a ship canal 7,000 ft. long, 200 ft. wide, and 16 ft. deep, from Buffalo Creek through the farm. This will afford excellent facilities for the handling of both coal and lumber. Preparations for pushing the work are being made.

Long Island.—Two extensions are proposed by this company, and work upon them will shortly be begun. One is from Port Jefferson, the present terminus of the Port Jefferson Branch, along the north side of the island to the main line at Riverhead, about 22 miles, making the branch a loop from Hicksville to Riverhead. The other extension is of the Locust Valley Branch from Locust Valley east through Oyster Bay, Cold Spring and Huntington to Greenlawn, on the Port Jefferson Branch, about 15 miles.

Louisville, New Albany & Chicago.—This company's new Air Line Division to Chicago was opened for business Jan. 9. This division extends from Delphi, Ind., to a junction with the Chicago & Western Indiana, crossing the main line at Monon. Its trains run into Chicago on the Chicago & Western Indiana track.

Louisville, New Albany & St. Louis.—Articles of consolidation of the Louisville, New Albany & St. Louis Railroad with the Evansville, Rockport & Eastern have been filed in Indianapolis. The capital stock is fixed at \$6,000,000, and the new company takes the name of the Louisville, Evansville & St. Louis.

Marquette, Houghton & Ontonagon.—It is reported that negotiations have been in progress for some time for the sale of this road to the Chicago & Northwestern. Such a transfer would give the Northwestern entire control of the Lake Superior iron mining district.

Mattoon & Northern.—This company has been organized to build a railroad from Mattoon, Ill., northward to a connection with the Illinois Midland near Chesterville, a distance of about 15 miles.

Meadville.—At the annual meeting in Meadville, Pa., last week the stockholders voted to increase the capital stock \$25,000; also to approve the lease of the road to the Pennsylvania Company.

Midland North Carolina.—North Carolina papers report that this company has made default on the payments due Jan. 1 under its lease of the Atlantic & North Carolina road. A short extension of time has been asked for and granted. It is also reported that work has been stopped on the line from Goldsboro to Salisbury, which the company is building.

New Bonds.—New issues of bonds are offered on the market as follows:

Clayton, Mahoning & Pittsburgh 6 per cent. first-mortgage bonds are offered by the American Finance Company, of New York. The issue is \$4,500,000 on 150 miles of main line projected from Warren, Pa., to Pittsburgh, with some miles of coal branches.

New York Central & Hudson River.—On the evening of the 13th a local passenger train on this road ran into the rear of an express train which had stopped near Spuyten Duyvil, N. Y., on account of some trouble with the brakes. The collision drove the rear car, a sleeping car, into the next car, wrecking them both. The wreck caught fire immediately and was entirely destroyed, eight persons who were either killed or injured, and were caught in the wreck, being burned up with it in spite of all efforts to save them. Two persons were saved who were very badly hurt, and some 18 others were slightly injured. Investigation seems to show an absence of proper signals to the following train. The rear brakeman, whose business it was to go back with a signal, has been arrested, pending the inquest. Hon. Webster Wagner, of the Wagner Sleeping Car Company, was one of those killed.

New York, Lackawanna & Western.—Work both on grading and tracklaying on this road is being pushed rapidly at several points between Elmira and Buffalo. At several points there has been much delay on account of trouble about right of way and crossings; but work has been pushed wherever it is possible. The second track is completed to Waverley, 39 miles from Binghamton.

New York & New England.—A car trust company is to be organized to furnish this company with the equipment needed for its increasing business, especially for its Western traffic. The capital stock of the car trust will be \$3,000,000, and offers for the whole amount have been made.

New York, West Shore & Buffalo.—The heading of the tunnel at Haverstow, N. Y., is through, and work is being pushed on the enlargement to the full size. The tunnel is 1,700 ft. long, and was begun about six months ago.

Northern Pacific.—A dispatch from St. Paul says that this company has agreed to build its proposed branch to the Yellowstone National Park next season. This branch will be about 80 miles long, and will probably go through West Gallatin Pass, which has been surveyed and found practicable. A syndicate has been formed in St. Paul for the purpose of building hotels and making other improvements in the park.

Ohio.—A petition to advance the *quo warranto* case relating to the consolidation by which this company was formed has been granted by the Ohio Supreme Court, and it is thought possible that the case may be heard and a decision given on the legality of the consolidation during the present month. Meantime, although the same officers are in charge of both roads, the accounts of the Cleveland, Columbus, Cincinnati & Indianapolis and the Cincinnati, Hamilton & Dayton companies are kept distinct, in conformity with the orders of the Court.

Ontario Railroad Projects.—The Toronto (Ont.) *Monetary Times* of Jan. 13 says: "The Local Legislature, which met yesterday, will have its full share of railway projects to deliberate upon. However most of the bills to be considered are of a minor character. There would seem to be a determination that the Great Western shall not long have a monopoly of the land carrying trade between this city and Hamilton and the Niagara River. No less than three or four companies are applying for power to build or extend lines in that direction. The Toronto, Hamilton & Buffalo wishes to construct a line from here to one or more points on the Niagara River via Hamilton; connection is wanted by the Hamilton & Northwestern with the Northern at some point near this city, which we presume means a direct line from Burlington hither. The Midland, too, desires to extend its line through or near Toronto and Hamilton to the International Bridge. It also wants power to buy, lease or amalgamate with other lines that it may touch. The St. Catharines & Niagara Central Railway Company ask power to extend their Hamilton line to a point in or near the city of Toronto, and to the village of Victoria, or other convenient point on the Niagara River, and their main line westerly to the town of Windsor, or other point on the Detroit River, and for other purposes. A legal firm in Hamilton proposes to incorporate a company to build a line between here and that city."

"The Weston & Duffin's Creek Railway Company wishes to change the location of its line and to build from Carleton place or thereabout, and aims to connect with railways running, or to run, into the city of Toronto from the west and north, with power to cross the lines of the Credit Valley, Grand Trunk, Toronto, Grey & Bruce, and the Northern railways, and to have its eastern terminus at or near Port Union, with power to construct docks, etc."

"A railroad from Port Dover to Brantford and thence to Toronto or some point on the line of the Credit Valley Railway is desired by the Toronto, Brantford & Port Dover Company. The Mississippi Valley Company desires power to build a line from Carleton Place to the Kingston & Pembroke road in the county of Frontenac. The Cornwall & Ottawa Company seeks incorporation for the purpose of building a road from Cornwall to the city of Ottawa, and asks power to run over other lines of railway in the province. The Prescott & Glengarry Counties Junction wish a road from some point on the Ottawa River, at or near Hawkesbury Village, passing Vankleek Hill to a point near Glen Robertson on the line of the Canada Atlantic Railway, with power to build a branch railway or tramway between Vankleek Hill and the Caledonia Springs. A railway is also proposed on Manitoulin Island between Little Current and Michaels' Bay, and power is asked to run a ferry to the Indian reserve in the county of Bruce, to connect with the same."

"The Leamington & St. Clair is asking for an extension of time to begin and complete its road and to build a road to the Canada Southern. The St. Mary's, Credit Valley & Huron wish to extend the time for the commencement and completion of the road, to Goderich, and also to Seaforth,

and thence to some point on Lake Huron. The Erie & Huron asks an extension of time in order to build the road."

Matters concerning old roads which will come before the Legislature include the contract for the transfer of the Toronto, Grey & Bruce to the Grand Trunk; an application of the Prince Edward County for power to build branches, docks and elevators, to buy iron mines and to increase its bonded debt to \$20,000 per mile; the Hamilton & Northwestern petition for an act to authorize the re-arrangement of the bond debts and the preference stock of the company, and to provide for the issue of new securities in lieu thereof. Charters are also asked for several tramways, one or two of considerable length.

Oriental Construction Co.—This company has filed articles of incorporation in Colorado for the purpose of building railroads in the United States and Mexico. Its capital stock is \$10,000,000. The officers are all connected with the Wabash or the Union Pacific.

Philadelphia & Reading.—The Receivers on Jan. 17 decided to pay on Feb. 10 the interest due last July on the general mortgage bonds. The amount is about \$600,000.

The annual meeting last week continued until Friday, the voting proceeding very slowly and each side interposing many objections to the votes offered by the other. On Friday the contest was closed by the voting of the Vanderbilt proxies for the Gowen ticket, giving it a decided majority.

After the election had closed a resolution was adopted referring the reports, etc., to the new board for action. The following resolution was then offered:

"Resolved, That we approve of the financial plans submitted for the relief of the company by Franklin B. Gowen, and request the incoming board of managers to carry them into effect with such modifications, if any, as in their judgment may seem most expedient, all legal objections and avoid the delay of further litigation."

A stock vote was called for, but, after some discussion, it was agreed to consider the vote cast for the Gowen ticket as being in favor of the resolution and the vote for the Bond ticket as against it, unless stockholders who had voted for Gowen and desired to oppose his deferred bond scheme, or vice versa, should correct the record before adjournment. The Chair is to take the figures reported by the judges of election and report them respectively for or against the resolution.

The following resolution was then offered and adopted without objection:

"Resolved, That the stockholders of the Philadelphia & Reading Railroad Company, remembering the long and honorable association of Messrs. McCalmont Brothers & Co. with the company, and fully recognizing the great service which in the past they have rendered to it, express the hope that the relations between them and the new management may be harmonious."

A resolution tendering the thanks of the shareholders to the Receivers for their able management of the company's affairs during the past year was also adopted. The Receivers filed a copy of their report with the Master, which that officer stated would be exhibited to the Court with the other returns.

The protracted meeting was finally closed in a few minutes' session on Saturday morning, Jan. 14, when the judges of election formally announced the result, the election of the Gowen ticket by a vote of 270,984 shares to 222,617 for the Bond ticket.

On the same day the presiding Master and the judges submitted their report to the Court of Common Pleas. Counsel for the McCalmont party stated that they still believed the judges wrong in refusing to allow voters to be questioned as to their ownership of stock, but did not intend to go any further. Counsel's remarks were closed as follows: "The parties we represent propose to make no factions; opposition to the result of the election as announced. While we believe that many of our challenges would be sustained, and that our interpretation of the law and charter is correct, yet the majority would appear to be somewhat near 47,000 shares, and we are not willing to make a contest while the majority is as large as that. It is due to the other side to say that from the result it is manifest that the majority of the stockholders are in favor of Mr. Gowen resuming control of the road."

An order was then entered declaring the officers and managers on the Gowen ticket elected and directing that they be permitted to assume office. The decree was made upon a *prima facie* case to be supplemented by a formal and written decree after the Master's formal report had been considered.

Piqua & Troy.—This company has been organized to build a loop line or second track for the Dayton & Michigan road from Piqua, O., south to Troy, about 12 miles.

Pullman's Palace Car Co.—It is reported that negotiations are in progress for a consolidation of this company and the Wagner Sleeping Car Company. It is said that a consolidation has been fully decided on, but that the basis is not yet finally settled, and many details remain to be arranged.

Richmond & Danville.—This company makes the following statement for the quarter ending Dec. 31:

Gross earnings	\$1,130,612
Expenses	590,211
Net earnings	\$540,401
Interest and rentals	305,142
Surplus	\$235,259

The charges include all interest on bonded and floating debt and all rentals accruing during the quarter.

At the adjourned annual meeting in Richmond, Jan. 18, the stockholders voted to authorize the board to subscribe for 10,000 shares of the new stock of the Richmond & West Point Terminal & Railway & Warehouse Company; also to authorize an issue of \$4,000,000 new 6 per cent. debenture bonds having 45 years to run.

Richmond & Louisville.—The Governor of Virginia has vetoed the bill authorizing the formation of this company by the consolidation of other companies. He does not object to the object of the bill, but considers that some of its clauses are too indefinite and confer powers which are entirely too extensive.

Springfield, Effingham & Southeastern.—The bondholders who bought this road at foreclosure sale have taken possession, and the Receiver has been discharged. The road is of 3 ft. gauge, and extends from Effingham, Ill., to Switz City, Ind., 86 miles.

Terre Haute & Cincinnati Short Line.—This company has been organized to build a railroad from Terre Haute, Ind., east by south to Lawrenceburg near the Ohio line, about 145 miles; also from Terre Haute southwest to the Illinois line, about eight miles.

Wheeling & Lake Erie.—The reported consolidation of this company with the Cleveland & Marietta and the Valley Railroad Companies is officially denied.